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NAVY OCCUPATIONAL HEALTH INFORMATION MONITORING SYSTEM

NOHIMS Primer

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The Industrial Health Component was created using the FileMan software application program (with enhancements). This manual provides an introduction to this FileMan-based Component. It includes:

FileMan Conventions, File Types, Data Types;
System access procedures - Log on/Log off, Menu Navigation;
Data entry techniques - HELP Processor, Lookups, LAYGO, options available at prompts;
Data retrieval techniques - Sort/Select criteria, Device Selection;
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TABLE OF CONTENTS

TABLE OF CONTENTS (Continued)

TABLE OF CONTENTS (Concluded)

LIST OF FIGURES

LIST OF TABLES

NOHIMS PRIMER
(Version 3)

1.0 INTRODUCTION

1.1 Purpose of the Primer

The Navy Occupational Health Information Monitoring System (NOHIMS) is a powerful and comprehensive information system that processes data associated with the health and safety of the Navy civilian work force. It consists of the following four modules:

- o Administration (ADMIN)
- o Environmental Exposure (EE)
- o Medical Exam Scheduling (MES)
- o Hazardous Materials Control (HMC)

Each module operates in an on-line interactive mode. The module asks you, the terminal operator, a question (this is called a prompt), and you immediately answer the question. The module will then ask you another question based on your response to the first question. To communicate effectively with the module you must know, in general, how you can respond to the questions NOHIMS asks. This information is presented in this document.

This document is intended to be used in conjunction with the Operator Guides that have been prepared for each NOHIMS module. The Operator Guides make frequent reference to the material in this document; for this reason, this document should be read before any of the Operator Guides are read.

1.2 MUMPS, FileMan, and the Kernel

The Veterans Administration (VA) has developed a general purpose data base management system and programmer tool kit called VA FileMan and a collection of system utilities that support VA FileMan called the Kernel. Both of these public domain software packages are written in the Massachusetts General Hospital Utility Multi-Programming System (MUMPS)

programming language. NOHIMS has been constructed by using many of the functions and features of these two packages. This Primer, in fact, describes in layman terms many of the conventions used in these two packages. Readers interested in obtaining more information about FileMan and the Kernel can obtain User and Technical documentation guides by writing to the following address:

MUMPS Users' Group
4321 Hartwick Road
Suite 308
College Park, Maryland 20740

1.3 Structure of This Document

The following sections explain how you can interact with NOHIMS to enter and retrieve data. Numerous examples are used to illustrate concepts and procedures. Section 2.0 explains how you gain access to the system, use the keyboard, and work your way through menus. In Section 3.0 you are given a brief overview of NOHIMS file structure. Section 4.0 describes the different field types found in NOHIMS files. Section 5.0 discusses various features you should know about NOHIMS, such as prompt sequence conventions, required fields, edit checks, timeouts, locked files, and software error messages. Section 6.0 describes the lookup process by which you can find entries in NOHIMS files. Special lookups are described in Section 7.0 for the Agency, Employee, Location, and Stressor files. Section 8.0 combines many of the earlier concepts and describes how you can add, edit, and delete entries in a file, including top level entries and lower level multiples. Section 9.0 describes how you can retrieve data from NOHIMS, including device handling, job queuing, and report sorting and selection. Section 10.0 contains detailed examples of NOHIMS editing sessions, annotated extensively with references to earlier Primer sections. Appendix A is a quick reference guide that presents the NOHIMS standard messages and provides an explanation of each as well as a description of the responses the user should make. Appendix B is a glossary of terms used in the Primer. Appendix C is the table of the American Standard Codes for Information Interchange (ASCII) character set, which is relevant to creating reports.

1.4 Terms and Abbreviations

The following terms and abbreviations are used in the Primer:

- CAS: Chemical Abstract Service
- EE: Environmental Exposure Module

- HMC: Hazardous Materials Control Module
- ICC: Injury and Compensation Claims Module
- LAYGO: Learn-as-you-go
- MUMPS: Massachusetts General Hospital Utility Multi-Programming System
- NCPDS: Naval Civilian Personnel Data System
- NEHC: Naval Environmental Health Center
- NIOSH: National Institute of Occupational Safety and Health
- NOHIMS: Navy Occupational Health Information Monitoring System
- SSN: Social Security Number
- VA: Veterans Administration
- VDT: Video Display Terminal

2.0 LOGON PROCEDURE AND MENU NAVIGATION

2.1 Content

[This section will be updated after the first NOHIMS installation.]

2.2 Use of the Terminal Keyboard

[This section will be updated after the first NOHIMS installation.]

2.3 LOGON Procedure

[This section will be updated after the first NOHIMS installation.]

2.4 Basic Menu Navigation

Menu navigation is simple if you imagine the set of menus as branches of a tree (Figure 2-1). The trunk of the tree is the System Manager Menu. Many branches, or options, come off of the trunk. One of these is the NOHIMS branch, or option. In all likelihood, you will be sent directly to the NOHIMS option at LOGON time. Each NOHIMS module is a major branch off of the NOHIMS option; therefore, one branch, or option, off of the NOHIMS Option is the Environmental Exposure module branch, another is the Hazardous Materials Control module branch, etc.

To navigate through the menus you must go from where you are up and down the branches of the tree, or stated differently, go to lower level or higher level options (you cannot currently jump from branch to branch). To go down the tree, i.e., to select the next lower level option, you enter the name of the lower level option. If you don't know the name or number of the lower level options, you can enter a "?". The system will then display the lower level options. For example, if you are at the NOHIMS Option and you want to use the Environmental Exposure module, you enter in response to the NOHIMS Option prompt either the number "3" or the letter "E" and depress the RETURN key to indicate that you want to choose an option at a lower level in the Environmental Exposure menu. (Remember: if you find it easier to key letters than numbers, you need enter only enough letters to help the system identify what you want; in this case, the letter "E" uniquely identifies the Environmental Exposure option. Also, even though the option name is in upper and lower case letters, you can enter all upper case letters).

To go up the tree, i.e, go to a higher level option from where you are, depress the RETURN key or an "^". For example, if you're at the Environmental Exposure option prompt and you want to use the Hazardous Materials Control module, go up to the NOHIMS Option. Therefore, you enter either an "^" or depress the RETURN key.

FIGURE 2-1
MENU STRUCTURES

One final comment: The NOHIMS menus will probably undergo many changes during field testing. By the time you use the system, the menus described above may be substantially altered. Don't let this confuse you. If you understand the principles of menu navigation, you can work your way through any set of menus.

2.5 Additional Menu Navigation Features

Two additional sets of features have been included in NOHIMS to help you with menu navigation. If you enter two question marks (??) in response to a menu option that has a suboption, the system will display, as is customary, the names of the lower level options to this option and, in addition, will enable you to perform the activities listed in Table 2-1. To execute any of these activities simply enclose the first letter(s) of the activity in quotation marks and depress the RETURN key.

If you enter three question marks after an option name (???), the name and also a description of the lower level options will be displayed to you. An example of this appears in Figure 2-2.

2.6 Summary

You must execute a specific procedure to gain access to NOHIMS. Once you have gained access, you navigate through menus to reach the options you intend to use. Once you have reached an option, you are ready to enter or retrieve data from the NOHIMS files. The general characteristics of those files are described next.

TABLE 2-1
POSSIBLE MENU ACTIONS (AFTER ENTRY OF "??")

[This table will be updated after the first NOHIMS installation.]

```
Select Core applications drivers Option: ???

'Administration Module (ADMIN)'
     This module provides options allowing the Functional Manager to:
      (1) update files central to the Application System:
       System Tables -- Occupations, Opeartions, Stressors, Medical Programs
       ADMIN Tables -- Sites, Clinics, Organization Levels
       Agency(s)/Units within Agencies
       Employee records
       Locations/Geographic Units within Sites
      (2) assign Agency Access to users (employee screening)
      (3) retrieve data ad hoc from any system file

     General System Tables must be initialized BEFORE using any parts of
     the NOHIMS system in a production environment!

'Environmental & Exposure Module (EE)'
     This is a generic menu of options that provides users with the
     following capabilities:
       (1) Provide a hazard profile of the workplace environment from:
           - Surveys
           - Boundary status
       (2) Identify employees at actual risk through exposures to operations
           or stressors from:
           - Sampling Survey records
           - Boundary Access records
       (3) Provide administrative record-keeping and planning support for:
           - Collection Instruments
           - Sample analyses
           - Equipment (PPE, Respirators)
           - Survey Monitoring

'Hazardous Materials Control Module (HMC)'
     TOP LEVEL MENU FOR HAZARDOUS MATERIALS CONTROL MODULE

'Medical Exam Scheduling Module (MES)'
     Main option driver for Medical Exam Scheduling
```

FIGURE 2-2
DISPLAY WHEN THREE QUESTION MARKS ("???")
ARE ENTERED AT AN OPTION PROMPT

3.0 OVERVIEW OF NOHIMS FILES

NOHIMS consists of a collection of files and the software necessary to add, edit, delete, display, and print data from these files. NOHIMS files are similar to the paper files you work with; they are repositories of data. You will find underlined terms from this and following sections defined in the glossary in Appendix A.

The fundamental unit in the file is the entry. An entry contains data on one unique "thing"--a person, a case, a survey, etc. An entry is equivalent to a paper folder you maintain on a "thing." In Figure 3-1, the entry in the Employee file is a person and the entry in the Occupation file is an occupation.

The entry consists of pieces of data which are called fields. As shown in Figure 3-1, an employee's social security number, sex, and birthdate are fields in the Employee file. The first field in the file is the entry's identification field (the ID field). In the Employee file, the employee's name is the ID field; in the Occupation file, the occupation code field is the ID field.

Many fields can have only one value, e.g., a person's social security number. However, some fields can have multiple values. NOHIMS handles this situation by treating these types of fields as subfiles; they are commonly referred to as multiples. Because they are treated as subfiles, multiples can contain a number of fields. A person's occupation history is an example of a multiple in the Employee file. It consists of two fields--date occupation began and occupation. Each "sub-entry" in the multiple must have its own ID field which is the first field in the subfile.

In your normal dialogue with NOHIMS, you will not explicitly be asked which files and fields you wish to deal with. Instead, you will respond to a series of prompts. When these prompts deal with data entry and retrieval activities, you are, in fact, entering and retrieving data from specific fields in specific files.

There are two types of NOHIMS files--Application files and Reference files. They serve different purposes and, therefore, your interaction with them is somewhat different. Application files store the data primarily processed by the modules; their contents are constantly changing. The Employee file is an example of an Application file. An Application file is generally used by one NOHIMS module; occasionally, as in the case of the Employee file, many modules use it.

Reference files contain controlled vocabularies of terms. Sometimes, these vocabularies can only be updated by your System Manager. In other

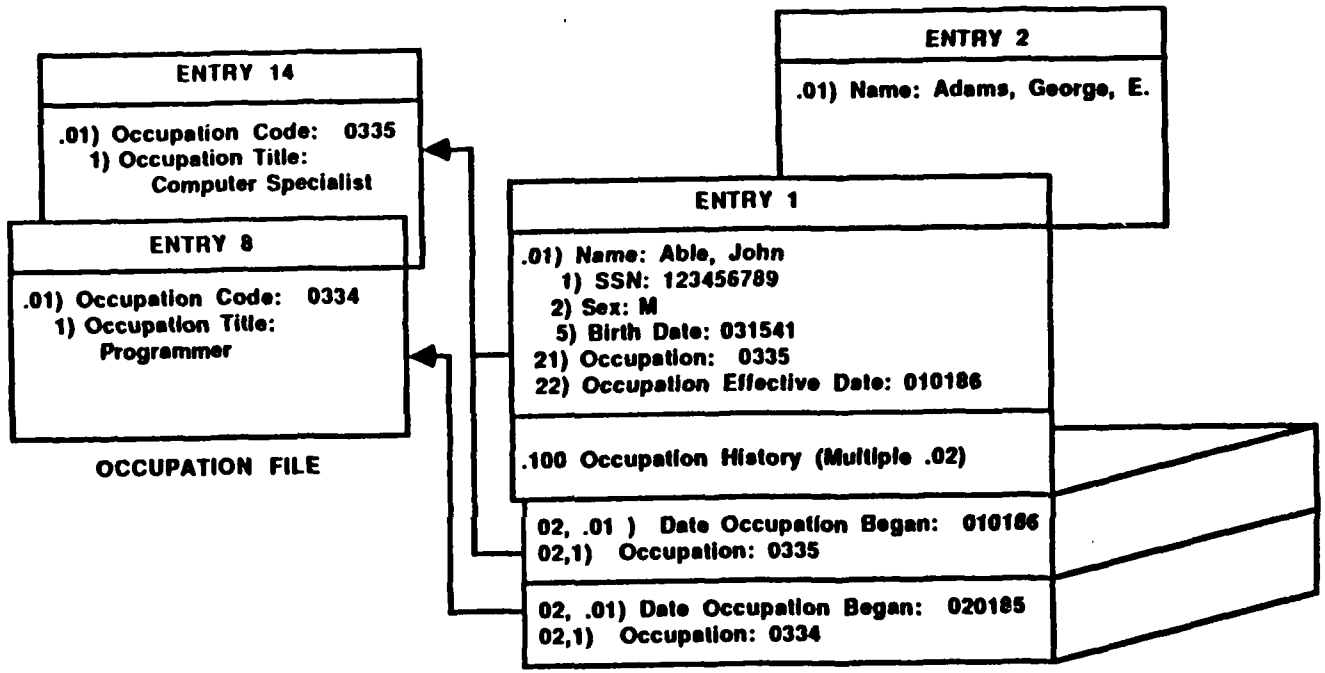

FIGURE 3-1
FILEMAN CHARACTERISTICS

cases, they can be built up over time as you enter new entries into them; this process is called learn-as-you-go, or LAYGO. When a field in an Application file can only take a value from a controlled vocabulary, this field is made to point to the appropriate Reference file. When you select a value for this field, you are actually selecting an entry from the appropriate Reference file. If you need to see the controlled vocabulary of terms in the Reference file, the system will display it to you. The Occupation file is an example of a Reference file.

4.0 FIELD TYPES

4.1 About Field Types

As shown in Table 4-1, NOHIMS files consist of six types of data fields--free text, number, date, set, word processing, and pointer--and the form of the help message tells you which type it is. (There is a seventh field type called "computed" but, since it involves behind-the-scenes activities, it will never appear in a prompt sequence). The characteristics of each type of data field are described below.

4.2 Free Text Fields

Free text data fields are used for fields whose meaning is best stated by a string of characters (a person's name is a good example). Normally, you will think of free text fields as consisting of a string of letters. Sometimes, however, numeric fields are free text fields because no computations should be performed on them, e.g., social security number (SSN), zip code.

Two problems can arise when you enter free text data. One is that your character string is either too long or too short. Remember that you can enter any letter, number, punctuation character, or special character (e.g., "[" or space) in your character string and each counts as a character. The other is that the format or type of characters is invalid. Sometimes, NOHIMS will be looking for free text data that does not contain certain characters; other times, it will check the data for a specific format. The employee name field is an example of when free text is checked for format. Employee names must be entered in uppercase with at least a few characters for the last name and a comma followed by a few characters of a first name (some punctuation is allowed for names like O'BRIEN or SMITH-JONES). A character string can also fail an edit check because it contains invalid characteristics, e.g., a social security number contains an alphabetic character or its format is wrong.

4.3 Number Fields

Number fields are used when the field's data consists only of numeric data (0-9 including decimal points) and is used in computations. The only problems you may encounter with numeric data are that your field value is too small or too large or that you have too many decimal positions.

TABLE 4-1
FIELD TYPES AND THEIR CHARACTERISTICS

DATA FIELD TYPE	VALID FIELD CONTENTS	FIELD TYPE EXAMPLE AND HELP MESSAGE FORM
1. Free Text	Any string of characters that satisfies the field's minimum and maximum length criteria.	EMPLOYEE COST CENTER: ? Answer must be 1-6 characters in length.
2. Numeric	Any numeric value including dollars and cents that meet the field's minimum and maximum values.	LOST WORK DAYS: ? Enter a number between 0 and 300.
3. Date	A date optionally followed by the time of day. If the time of day is entered, it follows the date, preceded by an "@" and should be in military format. The date must be within the allowable date range.	DATE OF INJURY: ? Enter the date the injury occurred. EXAMPLES OF VALID DATES JAN 22 1957 or 22 JAN 57 or 1/22/57 or 012257 or 012257@0900
4. Set	A fixed set of values: each value has both a short code and long description. You can use either the short code or more characters of the long description.	SHIFT AT INJURY: ? D - Day S - Swing G - Graveyard
5. Word Processing	A word processing field is a field that can store an unlimited amount of text. It is normally used whenever the amount of free text that can be entered for a field could exceed 255 characters.	COMMENTS: 1 EDIT OPTION: ? ADD BREAK CHANGE
6. Pointer	A free text or numeric value that satisifies the field edit criteria, and, if necessary, matches a value in another file.	OCCUPATION: ? DO YOU WANT THE ENTIRE OCCUPATION LIST?

4.4 Date and Time Fields

Date fields also create few problems as long as you read the HELP message. As the help message on a date field tells you, you can enter a specific date in any of the following formats:

DATE FORMAT	EXAMPLE
• Month Day Year	Jan 22 1957
• Day Month Year	22 Jan 1957
• Month/Day/Year	1/22/57
• MonthDayYear	012257

You must enter three letters for the month; the year can be shortened to the last two digits.

You can also enter a date, especially one near today's date, by entering the letter "T" (to designate "today") plus or minus a number of days or week from today. For example, if you enter:

- T You will get today's date (let's assume today's date is October 9, 1986)
- T-1 You will get yesterday (October 8, 1986)
- T+2 You will get two days from today's date (October 11, 1986)
- T+3W You will get three weeks from today's date (October 30, 1986)

In certain situations, a date field may be checked by NOHIMS to determine whether it is before or after a second date, before today, etc. If the date field fails a date check, you will get either the "?" response or an error message.

In certain cases, you may be expected to enter the time of day along with the date. In this case, you must respond as follows:

- Date (in any acceptable format) "@" Time in Military Format, e.g., 10/12/87@0900. There can be no spaces before or after the "@".

Special attention should be paid to take advantage of the data entry shortcuts and flexibility available to you in the date and time fields.

4.5 Set Fields

Set values also create few problems since all you can do is select, by short code or long description, which one you want. You should know, however, that the character string you enter will be compared first to the short code. If there is no exact match on the short code, your input will be compared to the long description for a partial or exact match.

4.6 Word Processing Fields

A word processing field can hold an unlimited amount of text data. Word processing fields can be confusing at first. When you see a prompt followed on the next line by a 1 >, such as:

```
COMMENTS:
  1>
```

you know you are dealing with a word processing field. The "1 >" is prompting you for the first line of text. When you enter RETURN at the end of line 1, you will be prompted for line 2; the prompt "2 >" will appear. When you have entered all of your data, press the RETURN key after the next two prompts and you will move on to the next prompt.

If a word processing field already contains data, this data will be displayed and you will be asked whether you wish tc edit this data as follows:

```
COMMENTS:
1> THIS REPORT DESCRIBES NOHIMS EDIT OPTION
Edit Option:
```

The HELP message for the Edit Option prompt, which is long, will tell you how to perform various word processing editing functions, e.g., add or delete a line, insert a character, change a character string, etc.

Figure 4-1 shows how two of these functions are used. First, a two-line survey comment was entered. We were then automatically issued the prompt:

```
EDIT Option:
```

Since we realized we had a second line we wanted to enter, we used the Insert function (by entering the letter "I"), entered the line, and then listed lines one to three. Then we decided that Bill Washington rather than George Washington had done the survey. At the Edit Option prompt we entered an "E" to use the edit option and changed "George" to "Bill." If we had used the Change option instead of the Edit Option, we could have changed one character string on one line, on all lines, or a

```
SURVEY COMMENT:

   1>SURVEY IS TO BE DONE BY GEORGE WASHINGTON ON BLDG 12
   2>SURVEY IS OF LOW PRIORITY
EDIT Option:  Insert after line:  1
   1>SURVEY IS TO BE DONE BY GEORGE WASHINGTON ON BLDG 12
   2>SURVEY WAS OVERLOOKED
   3>
1 line inserted

EDIT Option:  List line:  1// to 3//
   1>SURVEY IS TO BE DONE BY GEORGE WASHINGTON ON BLDG 12
   2> SURVEY WAS OVERLOOKED
   3> SURVEY IS OF LOW PRIORITY
EDIT Option:  Edit line:  1
   1>SURVEY IS TO BE DONE BY GEORGE WASHINGTON ON BLDG 12
   Replace GEORGE with BILL Replace ____
EDIT Line: ____
```

FIGURE 4-1
WORD PROCESSING FIELD INPUT AND EDIT

set of lines. Other edit options have equivalent flexibility. To exit from a word processing field, you must press the RETURN key after the "Edit" prompt.

4.7 Pointer Fields

A pointer field's value is a term contained in a different file's controlled vocabulary of terms. In some cases, you must enter a value for a field that matches an entry in the "pointed to" file. In other cases, you will be allowed to add a new entry in the "pointed to" file. This process is called LAYGO and provides an easy method for building up controlled vocabularies of terms over time. If LAYGOing is allowed, the HELP message will say YOU MAY ENTER A NEW (XXX) IF YOU WISH. If this message doesn't appear, you should check with either your supervisor or the System Manager to see whether a new entry is necessary or whether it is appropriate to select the closest value you can use from the controlled list (see Section 6.0, LOOKUPS IN GENERAL).

4.8 Actions to Take When Problem Situations Occur

Invariably, and especially early in the system's operational life, users find that they can't enter a piece of data because the field's edit checking specifications won't allow it--the field is too long or short, too large or small, the set values don't have your value, a controlled vocabulary of terms doesn't have the desired term and LAYGO isn't allowed, etc. When this occurs, you must stop what you are doing and either see your supervisor or the System Manager. The problem won't go away until it is fixed; if you enter allowable but wrong data, you will destroy the system's integrity!

4.9 Summary

NOHIMS files consist of a collection of fields. There are six field types, each of which has its own characteristics and edit checking logic. A data field type can be deduced by the nature of the field's help message. In the next section, we will describe how you enter or retrieve data from a set of fields.

5.0 PROMPT SEQUENCES

5.1 General

You will communicate with the system by responding to a sequence of prompts issued by the system. A prompt sequence primarily enables you to enter data into or retrieve data from a file's fields. Basic information about prompt sequences is presented in this section.

5.2 What is a Prompt Sequence

A prompt sequence consists of one or more individual prompts. For the most part, a prompt is a request for data. Prompt sequences are the system's way of asking you to enter data or tell it what you want it to do. You enter a prompt sequence by selecting an option from a menu. You exit from a prompt sequence, i.e., you end your interaction with a prompt sequence, by returning to the menu. In some cases, at the end of a prompt sequence you will be transferred back to the menu. In other cases, you will be returned to the first prompt in the sequence on the assumption that you will want to reexecute the sequence. If you don't want to reexecute it, you can normally return to the menu by depressing the RETURN key or by entering an "^." Remember that if a default value is shown, you must use the "^" to return to the menu.

5.3 Prompt Sequence Conventions

The following is an example of a prompt from the Administration module:

STREET ADDRESS:

The colon lets you know that NOHIMS is waiting for a response. You can respond in one of the nine following ways:

1. Enter new data--You enter data in response to a prompt by keying in the data and depressing the RETURN key. You must depress the RETURN key; if you don't, nothing will happen. The responses to all prompts are checked for validity, i.e., edit checked. If the data fails an edit check, the system will display two questions marks and redisplay the mis-answered prompt.

2. Enter no data (null through)--By depressing the RETURN key, you indicate that you do not want to enter any data in response to this prompt. This is called "nulling through" because no data is entered. The system will then display the next prompt. For example, in entering employee data you will be asked:

   STREET ADDRESS LINE 2:

If the person's address doesn't have a second address line, you indicate this absence of data by depressing the RETURN key.

Beware: You may have to enter data in response to a prompt; if so, the system will display either a message to this effect or the double question marks.

3. Ask for Help--By entering a "?" you indicate you aren't sure how to respond. The system will then display the help message (also called the question mark response) which it has for this prompt. The prompt will then be redisplayed.

4. Exit from the prompt sequence--By entering an "^" you exit from the prompt sequence if you are allowed to do so at that point. You will not be allowed to exit until you enter a valid and consistent value for each of the required fields.

5. Go to another prompt (in this prompt sequence)--By entering an "^" followed by a prompt name (or fragment of a name), you indicate you want to return to a preceding prompt or skip to a future prompt. For example, consider the following prompt sequence.

```
STREET ADDRESS: MAIN STREET
CITY:
```

Just as you are about to respond to the CITY prompt, you realize that your response to the STREET ADDRESS prompt should have been "16 Main Street." To return to the STREET ADDRESS prompt, respond as follows:

```
CITY:      STREET ADDRESS
```

The system will return you to the STREET ADDRESS: prompt.

6. Accept the prompt's default value--A prompt displays a default value when it follows the prompt with a data value and double slashes. For example, the prompt:

```
STREET ADDRESS: 16 MAIN STREET//
```

is displaying "16 MAIN STREET" as a default value. A default value occurs when a value is already in the data base or the most likely response to a prompt has been anticipated. If the default value is acceptable to you, just depress the RETURN key. That's the advantage of the default value; it reduces the typing effort.

7. Edit the default value--If you need to change the default value, enter your new value after the // and depress the RETURN key. Sometimes, if the data on file is a long string of text, you will be allowed simply to change selected characters of that text rather than having to retype the whole string. If the system displays an "old" answer and then asks "Replace", you can enter just the characters which you wish to replace, depress the RETURN key, and after the word "with" enter your new letters (the new letters will replace the first occurrence of the "Replace" character string).

```
NAME:  JOHN JACOB JINGLEHAEMER SMITH
Replace AE With EI Replace
JOHN JACOB JINGLEHEIMER SMITH
```

To replace the entire text, type three dots (...). The three-dot syntax may also be used to mean starting from a set of characters up to the end of the text as in:

```
NAME:  JOHN JACOB JINGLEHAEMER SMITH
Replace AE... With EIMER Replace
JOHN JACOB JINGLEHEIMER
```

The replacement will start at the first occurrence of the string you enter so be sure your string is unique at the place you want to start the replacement.

8. Delete the default value--If you need to delete the default value so that no data exist for this prompt, enter a "@" and then depress the RETURN key. For example, suppose you had erroneously entered the person's city in the response to the Street Address Line 2 prompt. When the system displays the prompt:

```
STREET ADDRESS LINE 2:  SAN DIEGO//
```

you could remove SAN DIEGO and not replace it with any other data by entering the "@" character after the //. The system will ask you if you are sure you want to delete the entry. You should answer "YES". Most new users forget how to delete data; make an extra effort to remember this.

9. Use the last value entered for this prompt--By entering a space (" ") and then the RETURN key you can tell the system you want to respond to this prompt with the same data you entered the last time you responded to it. This ability only applies to certain prompts, e.g., menu options. The system does not "remember" what you have answered to provide you with this capability in every case.

The activities described above are summarized in Table 5-1. Remember: You must depress the RETURN key after any of these activities; if you don't, nothing will happen. Also, if you don't know how to respond to a prompt, you should ask for help by entering a "?".

5.4 Required Fields or Consistency Checks

When you are entering data, the system will check your responses to make certain that you enter data for those fields where a value is required and that consistency checks have been met. Consistency checks are checks that one data value is "consistent" with another data value, e.g., when you are entering an appointment date for an employee, the date of the appointment cannot be earlier than "today." In some cases, if you attempt to null through a prompt that requires that data be entered, the system will issue a double question mark (??) and re-ask the prompt. In other cases, you will not receive an error message at the time you null through the prompt; however, at the end of the prompt sequence, you will get the following error message:

> Required field missing, multiple entry not fully processed, or field did not pass condition check.

The prompt sequence will then continue at the field that failed the edit check or was missing required data. You have to enter correct data or delete data as necessary to pass the edit checks. Enter "?" if you are not sure what needs to be done.

In some cases you may be given the opportunity to delete the entry and terminate your input session at that point. If so, the following message will be displayed:

> Enter 'C' or 'null' to continue processing this entry
> or enter 'D' to delete this entry.

If you attempt to exit from a prompt sequence (by using the "^" technique) before the end of the sequence, you may also receive one or both of these messages.

5.5 Timeouts

The system expects you to respond to every prompt within a specific period of time (the actual period of time will vary from user to user; usually it is in the range of one to three minutes). For this reason, it is important to have all input data in front of you before you start a prompt sequence. If you fail to respond to a prompt within the specified period, the system will automatically beep and take you out of the prompt

TABLE 5-1
RESPONSES TO A DATA ENTRY OR EDIT PROMPT

DESIRED ACTIVITY	ACTION	RESULT
1. Enter new data.	Data ⟨CR⟩	New data entered.
2. No data to be entered.	⟨CR⟩	No data entered.
3. Ask for help.	? CR	The help message for this prompt will be displayed.
4. Exit from the prompt sequence.	^⟨CR⟩	If you are allowed to do so, you can end this prompt sequence.
5. Go to another prompt in this prompt sequence.	^Prompt Name ⟨CR⟩	You can return to a previous prompt or jump to a later prompt.
6. Accept the prompt's default value.	⟨CR⟩	The prompt's default value will be accepted as is.
7. Edit the default value.	New Data ⟨CR⟩	Replaces the existing data for this prompt with new data.
8. Delete the default value.	@ ⟨CR⟩	Removes the existing data for a prompt and does not replace it with any other data.
9. Use the last value entered for this prompt.	space ⟨CR⟩	The system will give you the most recently entered value for the prompt, if it has "remembered" the value.
⟨CR⟩indicates use of the RETURN key.		

sequence. For new entries, it will delete the entry if it fails an edit check. When a new entry is deleted or an existing entry passes the edit checks and you continue not to respond, the system will "back" you out by proceeding up the menu you came down until you are exited from the system. If you were processing an existing entry and it does not pass the edit when the system times out, the system will return you to the prompt sequence until you respond and the edit check is passed.

5.6 Locked Files

In certain rare instances, you will attempt to execute an input sequence but will not be able to do so because a section of one of the files you are trying to use is being updated by another person or computer run. In this situation, the system will issue a message to you that the file section is locked, in-use, or not available. In this situation, there is nothing you can do but wait for the file section to become free.

5.7 Software Error Messages

A system as large as NOHIMS inevitably will still have a small number of software bugs when it is released to the field. When a software bug occurs, you will see the following message on your screen:

Error has occurred: < > at 10:50 AM

The word between the < > tells a programmer the type of error that has occurred.

The error is automatically logged in an error file for subsequent review by a programmer.

When you get an error message, stop what you are doing and ask the Supervisor or System Manager for advice. The problem will not go away until a programmer corrects it.

6.0 LOOKUPS IN GENERAL

6.1 Lookup Use

Whenever you are changing the contents of an entry or trying to display data on an entry, your first step is to identify the entry in which you are interested. You do this by performing a "lookup" on the appropriate file. The lookup process being discussed in this section is the standard FileMan lookup process. Special purpose lookups have been developed and incorporated into NOHIMS for files that are used extensively throughout the system; the special features of these lookups are described in Section 7.0. Before the intricacies of the lookup process are explained, you must first understand the concept of "character string matching."

6.2 Character String Matching

A character string is a sequential set of characters such as ABCDE, 12345, AB,b!34, etc. Unless a programmer has specified otherwise, a character string can consist of any numeric, alphabetic, punctuation, or special character; even a space is considered a character. NOHIMS is an efficient manipulator of character strings. For example, suppose you need to know if there is an entry in the Employee file for the employee, George Washington. To determine whether an entry exists in the file, the system will issue a prompt asking you to enter identification data for the entry in which you are interested. You would execute the appropriate Employee file lookup option; the system would issue the prompt:

```
EMPLOYEE NAME:
```

One thing you need to know ahead of time is that in NOHIMS the employee names are stored in the form: last name, first name, middle initial. In response to the prompt, you could answer with the word WASHINGTON. However, you don't have to enter the full word; all you have to do is enter a string of characters that would allow the system to locate the entry for you. For example, you could enter the string of characters "WASH". The system will then match your character string against each employee name in the Employee file (employee names are also character strings) and will display all employee names that begin with WASH.

For ID fields like Employee Name in the Employee file that use a comma to separate parts of the field, there is another way to use partial string matching. You can enter part of the last name followed by a comma and part of the first name. An example would be WASH,G. The system would look for all entries starting with WASH whose first name started with G.

Take advantage of the system. Don't type full words to locate an entry; type in a partial beginning fragment of the word and let NOHIMS do the rest.

Remember too, when you are entering character string data, that NOHIMS does not see uppercase and lowercase representation of a letter to be the same. That is, "A" is not the same as "a" to NOHIMS. For this reason, you should be sure to enter all data in uppercase only so that anybody trying to match the data you have entered does not have to guess when and how you have used upper and lower case letters. The only exception to this is when you are responding to an NOHIMS menu. Then upper and lower case are seen as the same. Also, remember that each character has a unique representation; the number "1" and the letter "I" are different as are the number "0" and the letter "O".

6.3 General Lookup Process Description

To lookup an entry in a file, you should enter enough characters to allow the system to find either your unique entry or all close matches. The fewer letters you enter, the longer the list of these possible matches, but the better the chance the entry you are interested in will be displayed. For example, if you wish to edit the boundary record for B86-0006-MN, you can type in the whole boundary number, and the system will find the boundary entry if it is on file:

```
Select BOUNDARY ID NUMBER:   B86-0006-MN
ID NUMBER:   B86-0006-MN//
```

However, as shown below, if you should misenter the boundary number, the system either will find the wrong entry or will ask if you are entering a new boundary:

```
Select BOUNDARY ID NUMBER:   B86-0060-MN
   ARE YOU ADDING 'B86-0060-MN' AS A NEW BOUNDARY
```

To save key strokes, you could use the partial lookup capabilities of NOHIMS. If you enter the letter "B," the system will find all entries that have a first letter of "B," including the one you are looking for:

```
Select BOUNDARY ID NUMBER:   B
   1   B86-0001-MN
   2   B86-0002-MN
   3   B86-0003-MN
   4   B86-0004-MN
   5   B86-0005-MN
```

```
TYPE '^' TO STOP, OR
CHOOSE 1-5:
   6    B86-0006-MN
   7    B86-0007-MN
CHOOSE 1-7:
```

In this example, NOHIMS had only the seven boundaries on file, as shown above, but if there had been hundreds of boundaries beginning with "B", our list would have been hundreds of entries long. If you entered "B86-000" as your partial entry, as in the following example, you would normally expect to find only about ten boundaries that match your input:

```
Select BOUNDARY ID NUMBER:      B86-000
   1    B86-0001-MN
   2    B86-0002-MN
   3    B86-0003-MN
   4    B86-0004-MN
   5    B86-0005-MN
TYPE '^' TO STOP, OR
CHOOSE 1-5:
   6    B86-0006-MN
   7    B86-0007-MN
CHOOSE 1-7:
```

Depending on which file you are working with, you'll need to determine how many characters to enter on a partial lookup so that you'll save key strokes and still have a list that is not too long.

When you enter a "?" at a lookup prompt, the help message is always displayed; you will also see the list of ID fields if there is a small number of entries on file. If you only want to see the list of ID fields and not the rest of the help message, enter "??". If the entry list is long, NOHIMS will ask you if you wish to see all of the entries. Instead of a YES or NO response, you may enter an "^" followed by an entry name (or partial character string) to see a list of all entries starting with those letters.

If you are trying to lookup an entry to a file or multiple that has a pointer for the ID field, a variation of the above process occurs because there are now two files involved, the home file and the pointed-to file. The system first attempts to find entries in the pointed-to file that have corresponding entries in the home file. If this occurs, you are asked to select from the shown pointed-to file entries. If you select one of these pointed-to file entries, the system will then ask you to select an entry from the home file. If you do not select any pointed-to file entries or none were displayed the process will stop here, if you are not allowed to add entries. If you are allowed to add entries, you will then be asked

to select from the pointed-to file any entries that matched your input value. The listed entries will include those that do not have corresponding entries in the home file and, occasionally, the list will include entries that have already been displayed (and, by inference, have corresponding home file entries). If you select one of these pointed-to file entries, you will then be asked to select an entry from the home file. This situation can be confusing. You must remember that in this situation, i.e., the ID fields point to another file, the system will first try to display to you entries that satisfy your input value on both home and pointed-to files and, if it finds that this is not possible, will then display to you matches in the pointed-to file.

The following example is a lookup of "069" for a multiple field (in the Medical Program file) that points to the Occupation file:

```
Select OCCUPATION REQUIREMENT: 0690      INDUSTRIAL HYGIENE
      ...OK?   YES// N  (NO)

   069
   1   0696        CONSUMER SAFETY
   2   0698        ENVIRONMENTAL HEALTH TECHNICIAN
   3   0699        HEALTH AID AND TECHNICIAN

CHOOSE 1-3:3
   ARE YOU ADDING A NEW OCCUPATION REQUIREMENT (THE 3RD FOR THIS
   MEDICAL PROGRAM)?  N (NO) ??

Select OCCUPATION REQUIREMENT:
```

The entry of "069" located an existing multiple value for "0690", which was not selected. The system then found all entries in the Occupation file that started with "069" and one was selected. The system did not locate that entry in the multiple. Since adding entries was allowed, the system asked if the selected entry should be added. If adding entries were not allowed, the selected entry would have been treated as an error.

A word of warning related to the Occupation file; you will not be able to use a partial lookup to find a code with a first position of one through nine.

6.4 Alternative Lookup Fields

In many cases, more than one field in the file may be used to lookup an entry. For example, in the Collection Instrument file, the ID field is

a serial number and the alternate ID fields are the instrument code and the instrument type. The question mark response tells you to enter any one of these fields:

```
Select COLLECTION INSTRUMENT SERIAL NUMBER: ?
  ANSWER WITH COLLECTION SERIAL NUMBER, OR INSTRUMENT CODE,
       OR TYPE
    YOU MAY ENTER A NEW COLLECTION INSTRUMENT, IF YOU WISH
       Enter the SERIAL NUMBER in 3-30 characters
Select COLLECTION INSTRUMENT SERIAL NUMBER:
```

Looking up by serial number will find the entry if it exists:

```
Select COLLECTION INSTRUMENT SERIAL NUMBER: 09409
   D-1 DRAGER PUMP A OK?  YES//
```

Looking up by instrument code also finds a single match:

```
Select COLLECTION INSTRUMENT SERIAL NUMBER: D-1 09409
   D-1 DRAGER PUMP A OK?  YES//
```

You may even lookup using a partial match for instrument code:

```
Select COLLECTION INSTRUMENT SERIAL NUMBER: N
   1   N-1 2324          N-1  GENRAD NOISE DOSIMETER  A
   2   N-2 99349          N-2  GENRAD NOISE DOSIMETER  A
   3   N-5 757575          N-5  GENRAD SLM (SOUND LEVEL METER)  A
```

Or, you may enter type (or partial name of a type) to find the collection instrument:

```
Select COLLECTION INSTRUMENT SERIAL NUMBER: NOISE DOSIMETER
   1   2324              N-1 GENRAD  NOISE DOSIMETER A
   2   99349              N-2 GENRAD  NOISE DOSIMETER A
```

The preceding lookup process is used for lookups on most NOHIMS files. Four files, however, are so frequently used by the NOHIMS modules that special lookups have been developed for them. These lookups are described in Section 7.0.

7.0 SPECIAL LOOKUP PROCESSES

7.1 General

Special lookup processes have been developed for lookups on four key NOHIMS files--Agency Unit, Employee, Location, and Stressor, since these files are used extensively in NOHIMS. The following materials describe in detail how to perform lookups on these files.

7.2 Agency Unit Lookup

The Agency Unit file of NOHIMS contains the description of the organizational structure of each agency that is part of the NOHIMS data base. Normally, a shipyard will be a single agency. Each level of the agency, e.g., each department, division, branch, section, shop, etc., is a separate entry in the Agency Unit file. The file also knows where each of the entries "fits" in the organization in terms of what entry is immediately above or below another in the reporting hierarchy. NOHIMS security will limit your ability to look up agencies and their agency units. Contact your supervisor or System Manager if you do not have access to an agency when you think you should.

For most of the modules in NOHIMS, you will need to know the difference between being prompted to enter an Agency, meaning that you are being asked to identify the organization itself, and being prompted to enter an Agency Unit, meaning that you are being asked to identify a specific shop, department, etc., of the organization. The prompts you are given will differ in these two cases (AGENCY vs. AGENCY UNIT).

Assuming that the agency unit lookup is a more specific form of the agency lookup (since all agencies are also at the same time agency units), let's look at the various ways you may respond to the AGENCY UNIT prompt. As is always the case, you may respond by entering a question mark (?):

```
Select AGENCY UNIT CODE/ABBREVIATION: ?
   ANSWER WITH AGENCY UNIT CODE/ABBREVIATION, OR NAME OR LEVEL
   CODE, OR SITE OF AGENCY UNIT
   DO YOU WANT THE ENTIRE AGENCY UNIT LIST?
```

From what you are told, you see that you may enter either an agency unit code, abbreviation, name, level code, or site. If you choose to enter a unit code, for instance "100", you will be shown all entries that have a code that matches or partially matches what you have entered. Notice that for each entry you are shown the code, the name, and the

abbreviation of the agency in which the agency unit is found, e.g., Code 100, Administrative, in NSMI:

```
Select AGENCY UNIT CODE/ABBREVIATION:  100
   1   100   COMMANDER   IN:MINS
   2   100   ADMINISTRATIVE   IN:NSMI
   3   100
   OPERATORS DEPT   IN:NEEC
   4   100   NEW UNIT (INACTIVATE)   IN:NARSDY
   5   1000   COMMANDING OFFICER   IN:NSMI
TYPE '^' TO STOP, OR
CHOOSE 1-5:
   6   1000   COMMANDING OFFICER   IN:NARF
   7   1000   COMMANDING OFFICER   IN:NEEC
   8   1000   COMMANDING OFFICER   IN:NASA
CHOOSE 1-8:
```

Be sure to select an agency unit that is in the correct agency.

If you want to identify the agency unit by name instead of code or abbreviation, you may enter all or part of the name. The following example shows how entering even a short part of the name can make looking up an entry very easy:

```
Select AGENCY UNIT CODE/ABBREVIATION:  M
    1   MINS    MARE ISLAND NAVAL SHIPYARD  IN:MINS
    2   MSCPAC      MILITARY SEALIFT COMMAND    IN:MSCPAC
    3   MACHINE BRANCH 931      MACHINE BRANCH  IN:NASNI
    4   MACHINE SHOP 931    MACHINE SHOP    IN:MINS
    5   MATERIAL DISTRIBUTION 74000 MATERIAL DISTRIBUTION
          IN:NARF
TYPE '^' TO STOP, OR
CHOOSE 1-5
    6   MATERIAL MANAGEMENT 7000    MATERIAL MANAGEMENT
          IN:NARF
    7   MECHANICAL GROUP 930    MECHANICAL GROUP    IN:MINS
    8   MECHANICAL SHOP DIVISION 930    MECHANICAL SHOP
          DIVISION  IN:NASNI
    9   METAL & PROCESSES 93000 METAL & PROCESSES   IN:NARF
    10  METHODS AND STANDARDS 63000 METHODS AND STANDARDS
          IN:NARF
CHOOSE 1-10:
```

To look up an agency unit by level code, you must be familiar with the Organizational Level file and its contents. This file has a code for each level of the organizational hierarchy and the title that is used for organizational entities at that level. The example below shows a lookup

for level code "4SH". You will probably have very little opportunity or reason to do your lookups this way:

```
Select AGENCY UNIT CODE/ABBREVIATION:  4SH
    1   4SH 971      PAINTERS AND BLASTERS SHOP  IN:MINS
    2   4SH 972      RIGGING SHOP     IN:MINS
    3   4SH 93100        GROUND SUPPORT EQUIPMENT     IN:NARF
    4   4SH 94100        INSTRUMENTS IN:NARF
    5   4SH 94200        ELECTRONICS & MISSILES  IN:NARF
TYPE '^' TO STOP, OR
CHOOSE 1-5
    6   4SH 94300        ELECTRONICS IN:NARF
    7   4SH 95100        P-3 LINE     IN:NARF
    8   4SH 95200        A-6 LINE     IN:NARF
    9   4SH 95300        A-7 LINE     IN:NARF
    10  4SH 96300        ENGINE DIV   IN:NARF
TYPE '^' TO STOP, OR
CHOOSE 1-10:
    11  4SH 96600        HYDROLICS DIV    IN:NARF
    12  4SH 43300        CORROSION CONTROL    IN:NARF
CHOOSE 1-12:
```

Finally, you may use the Site field to look up an agency unit. Site refers to a geographical location in which the main office of the agency unit is located. An example of looking up all agency units that are in the Point Loma site appears below:

```
Select AGENCY:  PT POINT LOMA    PT
    1   NASNI   NAVAL AIR STATION REWORK
    2   NARPL   NAVAL AIR REWORK POINT LOMA
CHOOSE 1-2:
```

7.3 Employee Lookup

In most cases, the Employee file in NOHIMS will be updated automatically in parallel with the Naval Civilian Personnel Data System (NCPDS) and/or the facility's payroll system. Therefore, most users will not be able to add employees to the data base or to change employee data. Because of the necessity to have valid data in the data base, however, there will be a few users for each system who are authorized and trained to update the Employee file. The data maintained in this fashion for an employee is primarily administrative in nature, e.g., the social security number (SSN), sex, address, pay rate and plan, work shift, or shop assignment (agency unit) of the employee.

Most users of NOHIMS will be using the Employee file to identify the employees associated with a specific input sequence. Each time you are asked to enter an employee, you will be doing a lookup of employees in the Employee file. You will only be able to lookup employees that are in the agency for which you have lookup capability.

As is the standard within NOHIMS, if you don't know how to respond to the Employee prompt, you may enter a "?" for more information:

```
EMPLOYEE: ?
ENTER THE EMPLOYEE'S NAME IN THE FORM LASTNAME, FIRSTNAME, MIDDLE
INITIAL
    OR ENTER THE EMPLOYEE'S SSN
    OR ENTER THE EMPLOYEE'S BADGE NUMBER IN THE FORM
      'B/'BADGE NUMBER
```

The help message tells you that you may enter either a name, a SSN, or a badge number to identify an employee.

To look up by SSN, you must type the nine-digit SSN in its entirety with no dashes or spaces. NOHIMS will not give you partial entry capability with SSNs. An example of a lookup by SSN looks like the following:

```
EMPLOYEE: 213557676    DOE, JOHN
               M   87654   213557676   SHOP:   300 (MINS)
             OK? YES//
```

Whenever NOHIMS shows you one or more possible entries, it also displays the sex, badge number, SSN, shop, and agency for each person found. This additional description enables you to identify the person you wish to select. You will also know whether or not the people listed are active employees, since the shop field will say "Terminated" for inactive personnel. Do not select a terminated employee unless it is appropriate.

To do a lookup by badge number, you must enter "B/" at the beginning of what you input to tell NOHIMS to do a badge lookup. Since employees do not necessarily have a badge number on file, if you don't find your person by his or her badge number, you should try either SSN or name. Sometimes two people in the same agency will be on file as having the same badge number because your agency reuses badge numbers. When this occurs, you'll have to select which of the people displayed is the one in which you are interested. The following example shows you a lookup by badge number:

```
EMPLOYEE: B/87654  DOE, JOHN
               M   87654   213557676   SHOP:   300 (MINS)
             OK? YES//
```

NOHIMS provides some additional assistance in the lookup by name. You may enter the name in its entirety, remembering that names are always entered as lastname, firstname, middle initial:

```
EMPLOYEE:  DOE,JOHN
                M   87654   213557676   SHOP:   300 (MINS)
              OK? YES//
```

Alternatively, you may enter part of a name ("partial name"), as was shown in the discussion of NOHIMS lookups in general:

```
EMPLOYEE:  DO
    1   DOE,JOHN
                M   87654   213557676   SHOP:  300      (MINS)
    2   DOLEY,TOM
                M   13402   000000016   SHOP:  134      (MINS)
    3   DOODLE,YANKEE
                M   177604  570117777   SHOP:  972.2    (MINS)
    4   DOON,BEN
                M   004     555555554   SHOP:  971      (MINS)
    5   DOON,BEN
                M   6454245 555009585   SHOP:  911      (MINS)
CHOOSE 1-5:
```

Some people may have the same last name, e.g., Smiths and Joneses. To enable you to limit the number of entries that you may find and still let you use the partial entry name lookup, you may enter part of a last name followed by part of a first name. It works like this:

```
EMPLOYEE:  DO,J  DOE,JOHN
                    M   87654   213557676   SHOP:   300    (MINS)
                  OK? YES//
```

Sometimes you don't know whether the first name you are looking for is the real first name of the person; it may instead be the the middle name. One of the test employees in the NOHIMS data base is named Smell The Flowers, or in NOHIMS format: FLOWERS, SMELL THE. Pretend that you knew this person by the name The Flowers. You would want to do your lookup on F,T. The following example shows what you would find:

```
EMPLOYEE:  F,T
    1   FLOWERS,SMELL  THE FLOWERS,SMELL THE
            M   36353   4444340904  SHOP:   4300    (NARF)
    2   FULLER,TOM  FULLER,TOM
            M   519988  539886543   SHOP:   926     (MINS)
    3   FUNK,TERRI  FUNK,TERRI
            M   5588777 538569494   SHOP:   926 (MINS])
CHOOSE 1-3:
```

Notice that you would find your person even though the first name initial you used was for the middle name. NOHIMS will not help you, however, with finding people by their nicknames. If you have a person named Bubba Kelly, or Skip Johnson, you should probably not try to enter the partial first name since Bubba's first name could be Francis or Garfield, etc., and Skip's first name could be Charles or Xavier; you don't really know the person's first initial. Remember that Bob, Dick, and Bill are actually nicknames for Robert, Richard, and William, respectively.

Another special feature of the employee lookup is that punctuation in the last name is ignored on the lookup but is still retained in the person's name as it is stored in the file. Therefore, you don't have to know exactly how a person prefers the punctuation in his or her name before you can do a lookup. The name OBrien is an example of how this feature works.

If you enter a partial name for OBrien, without any punctuation, you find all entries for OBrien, O'Brien, and O Brien:

```
EMPLOYEE: OB
    1   OBRI ',FRED  O BRIEN,FRED
            M   35353   555449191   SHOP:  011  (PTSMH)
    2   OBRIEN,PAT K JR  O'BRIEN,PAT K JR.
            M   12121   321214321   SHOP:  300  (LBNSY)
```

If you enter OBrien, or part of OBrien, you will still find all the OBriens regardless of whether there is a space in the name or not:

```
EMPLOYEE: O BR
    1   OBRIEN,FRED O BRIEN,FRED
            M   35353   555449191   SHOP:  011  (PTSMH)
    2   OBRIEN,PAT K JR O'BRIEN, PAT K JR.
            M   12121   321214321   SHOP:  300  (LBNSY)
```

Similarly, if you enter O'Brien, you will find all entries regardless of the punctuation in the name:

```
EMPLOYEE: O'BR
    1   OBRIEN,FRED  O BRIEN,FRED
            M   35353   555449191   SHOP:  011  (PTSMH)
    2   OBRIEN,PAT K JR  O'BRIEN,PAT K JR.
            M   12121   321214321   SHOP:  300  (LBNSY)
```

The same holds true for hyphenated names. The example below shows a lookup for Mary Smith-Jones when her name was spelled with the hyphen:

```
EMPLOYEE:  SMITH-JONES,MARY  SMITH-JONES,MARY
               F   33533   445669898   SHOP:  106.1    (MINS)
           OK? YES//
```

The following example shows you can lookup the same person without entering the hyphen:

```
EMPLOYEE:  SMITH JONES,MARY  SMITH-JONES,MARY
               F   33533   445669898   SHOP:  106.1    (MINS)
           OK? YES//
```

NOHIMS will also keep a record of each name by which a person has been known so that, if you are doing a lookup on the old name for a person, you can still find his or her entry. In the examples below, one of the Sue Greens has changed her name to Sue Brown. The first example shows the lookup using the old name--Sue Green. The second example shows the same person's record being found by looking for Sue Brown:

```
EMPLOYEE GR, S
    1   GREEN,SUE  GREEN,SUE
               F   002     555555552   SHOP:   970     (MINS)
    2   GREEN,SUE  BROWN,SUSAN
               F   002     555552252   SHOP:   93120   (MINS)
CHOOSE 1-2:

EMPLOYEE:  BR, S
    1   BRAMBLE,SUE  BRAMBLE,SUE
               F   485656  588330987   SHOP:   911     (MINS)
    2   BRODY,SHANE  BRODY,SHANE
               M   98707   552118888   SHOP    106.2   (MINS)
    3   BROWN,SUSAN  BROWN,SUSAN
               F   002     555552252   SHOP:   93120   (NARF)
CHOOSE 1-3:
```

One last feature of the employee lookup needs to be discussed. Additions to a name such as Jr., D.D.S., M.D., III, etc., can be entered in two different ways (each system site will establish conventions for these name additions to ensure uniform handling of them). In the example below, you will notice that there are two different Fred Irving Smith III's. One has been entered SMITH,FRED IRVING,III and the other has been entered SMITH III,FRED IRVING. The partial lookup entry for SMITH finds both of them:

```
EMPLOYEE:  SMITH
    1   SMITH III,FRED IRVING
                          092937373   SHOP:  038      (PTSMH)
    2   SMITH,FRED IRVING,III
                          023874949   SHOP:  011      (PTSMH)
    3   SMITH,IRVING FRED
                          023847272   SHOP:  011      (PTSMH)
    4   SMITH,JINGLHEIMER
            M             253487906   SHOP:  011      (PTSMH)
    5   SMITH,TOM
            M   67675     333112222   SHOP: 150       (PTSMH)
```

7.4 Location Lookup

The Location file controls the vocabulary used for the geographical locations in a facility. The file includes both active and inactive locations. Locations in NOHIMS are composed of four pieces of data--site, location, sublocation, and area--separated by commas. A site is the general geographic place where a facility is located, a survey was conducted, or an injury incurred. It might be Mare Island, Bethesda Naval Hospital, or Point Loma, etc. When your system is set up, the System Manager will create a set of sites that are to be used in your system. New sites can only be created by the System Manager. Your system may have one site or many, depending on whether you have a contiguous geographic location to manage, or a central site and one or more satellite locations. When you enter a question mark at the LOCATION prompt, you will get a list of the sites you may use:

```
SITE, LOCATION,SUBLOCATION, AREA:  ?
Enter SITE ABBREVIATION, LOCATION, SUBLOCATION, AREA, or any
subset such as SITE,ABBREVIATION,LOCATION. A partial entry
can be made for any section. An * would require that
section to be empty. For example:  ,PAR,* would select any
SITE, LOCATIONS starting with 'PAR', and SUBLOCATION empty,
e.g., SD,PARADE GROUNDS.
Possible SITE ABBREVIATIONS are:
    ALA for ALAMEDA
    CON for CONCORD
    MI for MARE ISLAND
    NI for NORTH ISLAND
    OAK for OAKLAND
    PT for POINT LOMA
    SD for SAN DIEGO
    SF for SAN FRANCISCO
    TI for TREASURE ISLAND
    VA for VALLEJO
```

```
Enter RETURN to continue
  ANSWER WITH LOCATION NAME
  DO YOU WANT THE ENTIRE LOCATION LIST?
```

You must always specify at least a site when initially entering a new location, but the other three pieces of the location description are optional. These other three allow you to refer to a more specific spot within the larger site. You will usually employ the location part to refer to a building, a ship, or a dock. The sublocation part will usually be a room or a deck or a cabin. The area part will be some further designation of the part of the room, deck, or cabin. You can think of each part as being "within" the part that is further to the left. The NOHIMS test system has a location defined for SD,BL300,R2,PAINT SHOP. This means that in San Diego there is a building 300, with a room 2, and room 2 has a paint shop. (Presumably, there is only one paint shop in this room, for we would not be able to distinguish one from another if there were more than one).

You don't have to enter all four pieces each time you name a location, but location data will always be filled up from the left to the right. This is because you can't have a part of something that you haven't specified. Consequently, there may be a SD,BL300,R2 or even a SD,BL300, but there will never be a SD,,R2 on file.

You have probably noticed that these examples have used abbreviations for 'building' and for 'room'. Though NOHIMS does not require this, using abbreviations cuts down on keystrokes. However, there is a danger in using abbreviations. NOHIMS cannot tell that the people who abbreviated building 300 as 'BL300', 'B300', 'BLDG 300' all meant the same place. <u>You will be given specific conventions on how to abbreviate the buildings, rooms, ships, and other locations in your facility, and you should follow them</u>. You will see some examples below where conventions were not used and a confusing situation was created.

When looking up a location, you will be able to use the partial entry capability that you have used in lookups of other files, but with locations you actually have four different pieces of data which you can partially enter. Let's take the case of just looking for all locations that have the second piece of their description starting with a "B" and are in site San Diego (SD). From the test NOHIMS data base, this is what happens:

```
SITE, LOCATION, SUBLOCATION, AREA:  SD,B
        1   B100     SD,B100
        2   B900     SD,B900,R100,POWDER BOX
        3   BL100    SD,BL100,R10,CARPENTER SHOP
        4   BL100    SD,BL100,R10
        5   BL106    SD,BL106,HEAD
```

```
TYPE '^' TO STOP, OR
CHOOSE 1-5:
        6   BL300    SD,BL300,R2,PAINT SHOP
        7   BL400    SD,BL400,R100
        8   BL600    SD,BL600,R3
        9   BL600    SD,BL600,R100
        10  BL700    SD,BL700,R30
CHOOSE 1-10:
```

You can see from this example how NOHIMS will find each location that matches the entry regardless of how many pieces of description data are associated with the location name. This list may also include inactive locations, so be careful not to select a location that is labelled "[INACTIVE]" unless it is appropriate.

When looking up a location, you are not required to enter each piece. You may skip the site piece, for instance, and find all locations that contain the description 'HANGER39' in the second piece:

```
SITE, LOCATION, SUBLOCATION, AREA:  ,HANGER39
    1   HANGER39    ALA,HANGER39,RM120
    2   HANGER39    ALA,HANGER39,SEC10
    3   HANGER39    SF,HANGER39,SEC20
    4   HANGER39    SF,HANGER39,SEC30
    5   HANGER39    OAK,HANGER39,RM140
TYPE '^' TO STOP, OR
CHOOSE 1-5:
    6   HANGER39    OAK,HANGER39,RM160
    7   HANGER39    OAK,HANGER39,RM180
    8   HANGER39    OAK,HANGER39,RM130
CHOOSE 1-8:
```

You can see in the example above that NOHIMS will find the HANGER39 entries even though they may be in different sites. (In reality, you should always know what site you are referring to in looking up a location, but if the need should arise, you can do the lookup without entering the site). The same kind of lookup is available for the third and fourth pieces of the location description. You may enter just the third piece, as in the following example:

```
SITE, LOCATION, SUBLOCATION, AREA:  ,,RM100
    1   RM100   MI,BLDG700,RM100
    2   RM100   MI,BLDG20,RM100
    3   RM100   MI,BLDG401,RM100
    4   RM100   MI,BLDG405,RM100
    5   RM100   MI,BLDG705,RM100
TYPE '^' TO STOP, OR
```

```
CHOOSE 1-5:
    6   RM100    MI,BLDG300,RM100
    7   RM100    MI,BLDG200,RM100
    8   RM100    MI,BLDG41,RM100
    9   RM100    MI,BLDG45,RM100
    10  RM100    MI,BLDG44,RM100
TYPE '^' TO STOP, OR
CHOOSE 1-10:
    11  RM100    MI,BLDG43,RM100
    12  RM100    ALA,BLDG41,RM100
    13  RM100    ALA,BLDG42,RM100
    14  RM100    MI,BLDG405,RM100,RUBBER BAKING BOOTH
    15  RM100    MI,BLDG405,RM100,VENTILATION BOOTH
CHOOSE 1-15:
```

Or you may enter just the fourth piece, as in the following example:

```
SITE, LOCATION, SUBLOCATION, AREA:  ,,,CARPE
    1   CARPENTER    SD,BL100,R10,CARPENTER SHOP
    2   CARPENTER    MI,BLDG47,RM102,CARPENTER SHOP
CHOOSE 1-2:
```

If you enter the fourth piece, you do not have to know in which order the descriptive words were entered. The lookup will allow you to find the entries that contain any word you enter:

```
SITE, LOCATION, SUBLOCATION, AREA:  ,,,SHOP
    1   SHOP     SD,BL100,R10,CARPENTER SHOP
    2   SHOP     SD,BL300,R2,PAINT SHOP
    3   SHOP     MI,BLDG47,RM102,CARPENTER SHOP
```

We have given you many examples in which we have used commas to distinguish between the pieces of the location name. NOHIMS actually 'sees' each piece of the name as a separate data item. It will never confuse the first piece with the second one, and so forth. You will have to use extra commas as shown in the examples to let NOHIMS know which piece you are looking for. Generally, you will not be doing your lookups with only a single piece of the description, but even when you are using several pieces of the description, NOHIMS will try to match each piece by its position (first, second, third, or fourth).

When you have not entered anything for a piece, NOHIMS will find all entries without regard to that piece. The following example shows how by looking for 'MI,BLDG405,RM100' you will also find the rubber baking booth and the ventilation booth within that location:

```
SITE, LOCATION, SUBLOCATION, AREA:  MI,BLDG405,RM100
    1   RM100    MI,BLDG405,RM100
    2   RM100    MI,BLDG405,RM100,RUBBER BAKING BOOTH
    3   RM100    MI,BLDG405,RM100,VENTILATION BOOTH
CHOOSE 1-3:
```

Sometimes, you will know that you want a location where one of the pieces does not contain anything. To do this, you enter an asterisk in that piece of your entry. Notice in the following example there have been no locations found that contain data in the fourth piece of the location:

```
SITE, LOCATION, SUBLOCATION, AREA:  SD,B,,*
    1   B100     SD,B100
    2   BL100    SD,BL100,R10
    3   BL400    SD,BL400,R100
    4   BL600    SD,BL600,R3
    5   BL600    SD,BL600,R100
TYPE '^' TO STOP, OR
CHOOSE 1-5:
    6   BL700    SD,BL700,R30
CHOOSE 1-6:
```

All of the examples so far have demonstrated where NOHIMS has found more than one match for the entered data. Sometimes, there will only be one match on file. Then, as shown below, you will be shown the location description found and be asked if this is the one you wish:

```
SITE, LOCATION, SUBLOCATION, AREA: SD,,,HEAD   SD,BL106,R100,HEAD
   OK?  YES//
```

In most cases, when you are looking up a location, you will be allowed to enter a new one if your entry meets the rules for a valid location description (LAYGO). The rules are fairly simple. You must have a site that already has been defined in the system. You must have at least two characters of description in each piece of the location description that is present. And, you must fill the description from left to right. The following example shows how a new location entry is made:

```
SITE, LOCATION, SUBLOCATION, AREA:  MI,BLDG47,RM102,CARPENTER SHOP  ??
ARE YOU ADDING 'MI,BLDG47,RM102,CARPENTER SHOP' AS A NEW LOCATION?
    Y (YES)
LOCATION DATE EFFECTIVE:  T-4  (AUG 31, 1986)
```

The Location file is a key file in NOHIMS. Location data is used in many of the different modules. You will need to become familiar with how to use the lookup capability, which you can do with practice.

7.5 Stressor Lookup

The Stressor file contains data for each hazardous agent in the workplace. Whenever a hazardous agent is named in relation to a claim, deficiency, survey, medical program, or training course, the Stressor file will control which stressors can be entered. The stressor vocabulary is predefined by the Naval Environmental Health Center (NEHC), but if Navy policy allows, the file can be added to locally for each system. To look up a stressor, you may enter either the stressor's name, synonym, Chemical Abstract Society (CAS) number, or National Institute of Occupational Safety and Health (NIOSH) number. As usual in NOHIMS, if you enter a question mark, you receive some help:

```
STRESSOR:     ?
  ANSWER WITH STRESSOR CLASSIFICATION, OR STRIPPED SYN, OR NIOSH
  NUMBER, OR CAS NUMBER
  DO YOU WANT THE ENTIRE 248-ENTRY STRESSOR LIST?
```

Most aspects of the stressor lookup work like a standard lookup on any NOHIMS file. The only differences occur in the handling of lookups by name, synonym, or classification. This section will limit its discussion to these types of lookups. At the time you are trying to select a stressor, there is no difference between trying to find it by its primary name or trying to look it up by one of its synonyms. In fact, you will probably not know which name is considered primary and which names are considered synonyms until you look into the file. The only important difference between the two types of names for a stressor is that the primary name is the name that will appear on all output reports that show the stressor name, regardless of which name was used in data entry. Suppose you want to look up the stressor 'ASBESTOS'. You may use a partial entry, as you have before, and the lookup would appear as follows:

```
STRESSOR:  ASB     ASBESTOS
        . . . OK?  YES//
```

In this case, the primary name of the stressor is 'ASBESTOS'. You will always be shown the primary name, along with whatever other name is appropriate, based on what you have entered.

If you were to look up stressors that begin with 'ABI', you would get the following:

```
STRESSOR:  ABITOL  ALCOHOL
       . . .OK?  YES//
```

The lookup process has furnished the word 'ABITOL' for you, which indicates that this is the only match to 'ABI' that was found. Furthermore, you are shown that 'ALCOHOL' is the other name for abitol. In this case, alcohol is the primary name of the stressor and abitol is a synonym.

Some stressor names start with numbers. If you wish to look up the stressors that started with '1,1', you would see the following:

```
STRESSOR:  1,1
    1   1,1,1,-TRICHOROETHANE
    2   1,1,2,2-TETRACHOROETHANE
    3   1,1-DIMETHYLHYDRAZINE DIMETHYLHYDRAZINE
CHOOSE 1-3:
```

The numbers are not required, however, in order to find a match. Consider the following example:

```
STRESSOR:  TET
    1   TETRACHLOROETHYLENE
    2   TETRACHOROMETHANE  CARBON TETRACHORIDE
    3   TETRACHOROETHANE  1,1,2,2-TETRACHOROETHANE
    4   TETRACARBONYL  NICKEL CARBONYL  (NICKEL TETRACARBONYL)
CHOOSE 1-4:
```

The third choice found in this list is the same stressor as the second choice in the previous example, but this time the lookup was done without entering the numbers.

Now let's look at an example for a name that is more than one word long. If you look for 'COAL', you will get the following display:

```
STRESSOR:  COAL
    1   COAL GASIFICATION
    2   COAL TAR PRODUCTS
    3   COAL NAPHTHA  BENZENE
CHOOSE 1-3:
```

The third choice from this list is for coal naphtha, which is otherwise known (primary name) as benzene. We found this stressor by entering the first word of the (synonym) name. What would NOHIMS do if you entered a word that was not the first word of the name? Let's look for 'NAPHTHA'. We can use a partial match, by entering just 'NAPH':

```
STRESSOR:  NAPH
    1   NAPHTHA
    2   NAPHTHALIDAM  ALPHA-NAPHTHYLAMINE
    3   NAPHTHA  NITROSO-NAPHTHA
    4   NAPHTHALENE  1,5-NAPHTHALENE DIISOCYANATE
    5   NAPHTHIONIC  0-NAPHTHIONIC ACID
TYPE '^' TO STOP, OR
CHOOSE 1-5:
    6   NAPHTHYLAMINE  BETA-NAPHTHYLAMINE
    7   NAPHTHA  BENZENE  (COAL NAPHTHA)
    8   NAPHTHA  PETROLEUM DISTILLATE  (ALIPHATIC NAPHTHA)
    9   NAPHTHA  ETHYL ACETATE  (VINEGAR NAPHTHA)
    10  NAPHTHYL  CARBARYL  (1-NAPHTHYL N-METHYL-CARBONATE)
CHOOSE 1-10:
```

You can find the benzene, or the coal naphtha stressor, on line 7. NOHIMS also found many other stressors that have a name beginning with "NAPH". Line 1 tells us that there is a stressor that has the primary name of naphtha. Line 3 shows that naphtha is also a synonym for nitroso-naphtha. Lines 7 through 10 show us that the word naphtha appears in a synonym. The synonym is shown in parentheses after the primary name of the stressor, so in line 7 you see coal naphtha as the synonym for benzene, which we already knew from the previous example. Line 8 shows aliphatic naphtha as the *synonym* for petroleum distillates. Line 10 shows that the word naphtha was found in the synonym 1-naphtha n-methyl-carbonate, which is the synonym for carbaryl The lookup by name is designed to find whatever stressors contain the characters that you have entered for lookup. Therefore, you may run into the above situation when you're doing data entry. If you are entering data from a form and cannot distinguish which stressor to choose, you'll need the assistance of an industrial hygienist to help you know which is the right stressor for the data you are trying to enter.

The last type of lookup for stressor is for entry of a classification. The example below shows part of what was found when a lookup for carcinogens was done:

```
STRESSOR:  CARCINOGEN
    1   4-AMINODIPHENYL
    2   ASBESTOS
    3   BENZENE
    4   BENZIDINE
    5   BERYLLIUM
TYPE '^' TO STOP, OR
```

```
CHOOSE 1-5:
    6   BIS-CHOROMETHYL ETHER
    7   1,2-DIBROMO-3-CHLOROPROPANE
    8   3,3-DICHLOROBENZIDINE
    9   ETHYLENE DIBROMIDE
    10  ETHYLENEIMINE
TYPE '^' TO STOP, OR
CHOOSE 1-10:
    11  ETHYLENE OXIDE
    12  FORMALDEHYDE
    13  HYDRAZINES
    14  HYDROQUINONE
    15  4,4-METHYLENE BIS(2-CHORDANILINE)
TYPE '^' TO STOP, OR
CHOOSE 1-15:
```

You will rarely use this type of lookup in entering data because you should be working from input forms most of the time and, therefore, have been told exactly which stressor is the one to be entered. But since the option is available, we have shown you an example here.

8.0 ADDING, DELETING, EDITING OR RETRIEVING FILE ENTRIES OR MULTIPLES

8.1 Background

In general, the first step when you are entering or retrieving data from NOHIMS is to perform a lookup on the appropriate file. When you are adding an entry or a multiple to a file, you will expect that the lookup will not find an appropriate entry or multiple. When you are deleting, editing, or retrieving data from a file, you will be expecting to locate the appropriate entry. In either event, your starting point is the performance of one of the lookup processes described in the preceding sections. Your next step depends on the action you intend to perform.

8.2 Entry-Oriented Activities

8.2.1 Adding an Entry to a File

This discussion presumes you are in an option that allows you to enter new data and that you have the security access required for entry of new data. If this is not true, any entry you attempt to add will be treated as invalid data, and you will receive some form of error message. In such cases, you should contact your supervisor or System Manager.

Before actually adding an entry, you should first make sure it is not already on file by doing a partial lookup (as discussed in Section 6.0). If the partial lookup does not identify an entry with the same ID value and other identifying information as the entry you intend to add, do not select any of the displayed entries or add your "partial" entry to the file. Instead, get back to the original "Select" prompt and enter the complete ID field value you wish to add. For example, if you were looking for George Washington with social security number 222222222, you could do a lookup for "W,G". If there were entries for Greg Wort, or even entries for George Washington but with different social security numbers, you would not select any of them. When asked, "ARE YOU ADDING 'W,G' AS A NEW EMPLOYEE"?, you would respond with an "N". Then you would start the sequence again by entering "WASHINGTON, GEORGE" at the EMPLOYEE: prompt. Figure 8-1 shows an example of this type of system activity.

The first thing that happens when you now enter the full ID field is that the system executes another lookup against the file. This lookup will have one of the following outcomes:

1. The system now shows an entry with all the identifying data of the one you wish to add, even though you just verified that the entry is not already on the file. In the Employee file, for instance,

```
EMPLOYEE: W,G
     1   WASHINGTON,GEORGE  WASHINGTON,GEORGE
                    M  11101        111111111    SHOP: 106.1       (MINS)
     2   WORT,GREG  WORT,GREG
                    M  456345       555557111    SHOP: 971.1       (MINS)
CHOOSE 1-2:
   ARE YOU ADDING 'W,G' AS A NEW EMPLOYEE? N  (NO) ??

EMPLOYEE: WASHINGTON,GEORGE
                    M  11101        111111111    SHOP: 106.1       (MINS)
         ...OK? YES// N  (NO)
   ARE YOU ADDING 'WASHINGTON,GEORGE' AS A NEW EMPLOYEE?  ??

EMPLOYEE:  WASHINGTON,GEORGE
```

FIGURE 8-1
LOOKUP BEFORE ADDING AN ENTRY

this would occur if your new entry had the same name as a person already on file. You should not select the existing entry, reply "N" to the "ARE YOU ADDING" question, and contact your supervisor or System Manager for guidance.

2. The system shows one or more entries with the same ID field but the rest of the identifying data does not correspond to the entry you are making. You should not select any existing entry, but you should reply "Y" to the "ARE YOU ADDING" question, which will either say "ARE YOU ADDING (ID value you entered) AS A NEW (ID field)?" or "ARE YOU ADDING A NEW (ID field)?"

3. The system rejects your entry with an error message, "??", or null response. This could indicate that the format of the field you entered was invalid or that you tried to create a duplicate entry on a file that does not allow duplicates. You can enter a "?" to get help. If that is not sufficient, contact your supervisor or System Manager.

These types of responses are shown in Figure 8-2. The first example continues the prompt sequence in Figure 8-1 and shows that the entry we want to add is now on file, possibly indicating that someone else has added it in the intervening time. The second example adds John Smith as an active inspector when there are two other John Smiths who no longer are active inspectors. We have added the new John Smith because we know he is not the same person as either of the two inactive inspectors. The third example illustrates an invalid format entry.

In some options, if the lookup process locates a single matched entry, it will not ask you if the entry found is the one you want; instead it will put you into the regular prompt sequence. If the entry selected is not the one you want, enter an "^" at the next prompt. If this was the result of a lookup on a full ID value, try reentering the value enclosed in quotation marks, e.g., "WASHINGTON, GEORGE". Figure 8-3 gives an example of this type of system behavior.

To add an entry to a file (or multiple) that has a pointer for the ID field, you can use a partial lookup to get the pointed-to entry. You would only have to enter the full ID field if you were also doing a LAYGO into the pointed-to file. See Section 6.3 for a description of a lookup process involving a pointer.

8.2.2 Deleting an Entry from a File

After you have added or selected an entry, you may be prompted for the ID field with the ID value as the default. If you enter an "@" at

```
EMPLOYEE: WASHINGTON,GEORGE
     1   WASHINGTON,GEORGE
                 M  11101        111111111     SHOP: 106.1       (MINS)
     2   WASHINGTON,GEORGE
                 M  2222         222222222     SHOP: 106         (MINS)
CHOOSE 1-2:
   ARE YOU ADDING 'WASHINGTON,GEORGE' AS A NEW EMPLOYEE?  ??

EMPLOYEE:


Select INSPECTOR NAME: SMITH,JOHN
     1   SMITH,JOHN              INACTIVE
     2   SMITH,JOHN              INACTIVE
CHOOSE 1-2:
Select INSPECTOR NAME: '^SMITH,JOHN'
   ARE YOU ADDING 'SMITH,JOHN' AS A NEW INSPECTOR (THE 8TH)? Y  (YES)
   INSPECTOR INACTIVE FLAG: A  ACTIVE
NAME: SMITH,JOHN//
INACTIVE FLAG: ACTIVE//
INSPECTOR CODE:


Select INSPECTOR NAME: ^SMITH ??
Select INSPECTOR NAME:
```

FIGURE 8-2
ADDING AN ENTRY OUTCOME

```
Select INSPECTOR NAME: HAMILTON                ACTIVE
NAME: HAMILTON// ^

Select INSPECTOR NAME: 'HAMILTON'
   ARE YOU ADDING 'HAMILTON' AS A NEW INSPECTOR (THE 9TH)?  ??
```

FIGURE 8-3
ADDING A SECOND ENTRY

this prompt you will either be asked if you want to delete the entry or you will be told that entries can't be deleted. If you are not prompted for the ID field, you will not be able to delete the entry and should contact your supervisor or System Manager.

8.2.3 Editing an Entry

After you have added or selected an entry, you may be prompted for the ID field with the ID value as the default value. If so, you can enter a new value for the ID at this prompt. This will change the ID value for all occurrences in the system. In some cases the system may not allow you to change the ID value even when you are prompted for it and you will have to delete the existing entry and reenter the new value.

8.3 Multiples-Oriented Activities

8.3.1 General

Multiples, i.e., fields that can store multiple values, are handled as subfiles. Each multiple consists, in effect, of "mini-entries." The principles just described for entries apply also to multiples, although some differences exist.

Multiples, of course, occur as part of an entry, so you must first find the correct entry. You can usually recognize that you are being prompted for a multiple field by the presence of the word "Select" before the field's name. The major difference between entries and multiples is that the system, for the ID field of the multiple, will sometimes display to you the last ID field entered for the multiple or sometimes display no data at all, depending on the situation. Do not get confused and assume that there are no data values or only one data value for the multiple. To find out all of the data values that have been entered for a multiple, enter a "?" at the "Select" prompt, as shown in Figure 8-4. The "Select LOCATION" prompt is in the Exposure Module's Walkthrough Survey option; the locations are the locations recorded on a Walkthrough Survey. The "Select LOCATION" prompt does not show any locations. The question mark response shows that two locations have been entered for this survey. You may enter a third location for the survey, and in so doing may also LAYGO a new location into the Location file. Or, your third location for the survey may be a location already in the location file. Whether the location is known in the Location file or not, you must enter any surveyed location's name into the Location multiple for the survey.

8.3.2 Adding or Editing a Value to a Multiple

To add a value to a multiple, you should first make certain the value doesn't exist by using the "?" response to the "Select" prompt and reviewing the list. If the value is not already part of the multiple,

```
Select Survey Entry Option: 1  Walkthrough Data Entry
Are you going to create a new survey from an old survey?  N//

Select WALKTHROUGH SURVEY NUMBER:    W86-0001-MN
            OK? YES//        (YES)
Do you wish to edit the cover sheet data?   N//
Select LOCATION:    ?
  ANSWER WITH LOCATION
CHOOSE FROM:
    1    MI,BLDG200,RM100
    2    MI,BLDG200,RM150
    YOU MAY ENTER A NEW LOCATION, IF YOU WISH
ANSWER WITH LOCATION NAME
DO YOU WANT THE ENTIRE 122-ENTRY LOCATION LIST?  N  (NO)
     YOU MAY ENTER A NEW LOCATION, IF YOU WISH
```

FIGURE 8-4
THE MULTIPLE "SELECT" PROMPT DISPLAY

enter the new value after the "Select" prompt. The main difference from the add process described in Section 8.2.1 is that you may not be asked the "ARE YOU ADDING" question for a new multiple entry. If you are not, and the new value is an error, try to delete the entry or edit its value to the correct one before contacting your supervisor or System Manager for assistance.

To edit a value, you must first locate the value (assuming it is not being displayed as the default value) by entering the value after the "Select" prompt. The system may then prompt you to edit the value you have just entered. As with file entries, the system may not allow you to change the value and you will have to delete the old value and reenter the new multiple entry.

8.3.3 Deleting a Value

There are two ways to delete a multiple. If the value you wish to delete is the default for the "Select" prompt, enter an "@" at the "Select" prompt. If it is not the default, first select the value you wish to delete. If you are then prompted for ID field of the multiple with the value as the default, enter an "@" at that prompt. In either case, you will be asked if you wish to delete the entry.

If the system does not show a default for the select and does not prompt you for the multiple ID field, then you are not allowed to delete the multiple entries, and you will have to call your supervisor or System Manager.

9.0 BASIC OUTPUT ACTIVITIES

9.1 Overview

Frequently, you will want to display information or print reports. These are retrieval or output processes and, in general, use the same techniques described in previous sections. You must LOGON to the computer, arrive at the needed menu option, and respond to prompts. There are, however, a number of prompts that you may encounter in output activities that you do not encounter when you are entering or editing data. These are described in this section.

9.2 Device Handling and Job Queuing

Typically, you will initiate an output activity from a video display terminal (VDT) that is located where you work. If you intend to display a small amount of data, you may be content to have the results displayed on your VDT. Your VDT normally will display 24 80-character lines on one screen. If more data is generated than can be displayed on one screen, the system will stop after each 24 lines of output and wait for you to depress the RETURN key. However, if you intend to generate significant amounts of information, you will want to route your output to a printer or tell the system to treat your terminal as a printer. In printer mode, the lines of data will flow continuously up your screen or on the printer until either the job is completed or you stop the flow by depressing the NO SCROLL key. (If you use either the NO SCROLL key or HOLD SCREEN key to stop the output to your device, you can tell the system to resume the flow of data to your device by depressing the NO SCROLL key or HOLD SCREEN key a second time. If you forget to do this, your device is essentially dead and will stay so until you reactivate it). And, if the output takes a long time to run or will strain the computer's capacity, you may want to run the job at night. In these situations, you will want to tell the computer your device handling and queuing requirements.

You will encounter a device-related prompt again when you are using an NOHIMS option that produces a display or a report. Just prior to the execution of the display or the report, you will see the following line on your terminal:

```
DEVICE:                                RIGHT MARGIN:   XX//
```

At the DEVICE prompt you can:

1. Depress the RETURN key or enter a zero and depress the RETURN key; the output will appear on the device you are using.

2. Enter the line or identifying number of the device where you want the output to appear; you frequently will use this feature to direct output data to a printer when you are using your VDT.

3. Enter the following values: Device Number, Right Margin, Lines Per Page, to change the device characteristics.

4. Enter a "Q" to tell the system you want the output to be produced at a later time. The system will then ask you when you want the job to run and on which device to produce the output, and will then tell you that your job has been queued. (You may not be able to queue some print jobs, depending on the circumstances).

5. Enter a "^" to abort the producing of outputs.

The RIGHT MARGIN default value will tell you how many characters will appear on a line of output. If you are using a VDT, the right margin value will be 80. You can change this to 132 characters, the typical value for 14 inch printer paper.

9.3 Selection and Sorting

9.3.1 General

Most NOHIMS outputs are relatively fixed. Some reports, however, have been designed to give you some control over the range of the output. Your options in this situation are described below.

9.3.2 Sort and Selection Criteria

Consider a report of the pay rates of the employees in your agency. The simplest report would be to produce a list of employees and their pay rates by employee, where the employees are listed in the order they appear in the file. Since the employees are in random order in the file, this report would be useless. We could easily tell the system to sort the list alphabetically by employee name. This would result in the system producing a report of all employees in alphabetic order by their names. In NOHIMS when we sort, the system prompts us for a START WITH and a GO TO value. We are only asked for the GO TO value if we actually choose to enter something when it asks us for a START WITH value. The START WITH prompt looks like this:

```
START WITH EMPLOYEE:  FIRST//
```

NOHIMS assumes that we want all entries if we tell it to start with the first value, which we do by entering a RETURN at the START WITH prompt. (This causes us to accept the default value "FIRST"). Suppose we wanted to list the employees' whose names begin with "A" through "G." Using the sort capability we can do the following:

```
START WITH EMPLOYEE:  FIRST//A
  GO TO EMPLOYEE:  LAST//GZZ
```

We use "GZZ" to make sure to include everyone who begins with G. Now our report in alphabetic order will only contain employees whose names are in the range specified.

Now, suppose we wanted only a list of male employees. In this case, we would tell the computer to select male employees. We could do this in a number of ways; the approach that is of interest to us is to tell the system to sort the Employee file by sex and then by employee name, and when it is sorting by sex to only include entries with sex fields that begin with and end with the letter "M." In this way, we use the sort mechanism to accomplish the selection. This same philosophy can be used to limit the shop(s), location(s), operation(s), etc. in a report.

Our example would look like this:

```
START WITH SEX:  FIRST//M
   GO TO SEX:  LAST //M
   START WITH EMPLOYEE:  FIRST//_
```

Note that by choosing to use the "FIRST" value, you will only include items in the report that have a value in the field. For instance, if you sorted through the employee file on Termination Date, from "FIRST" to "LAST," only employees who have been terminated will appear on your report. Current employees have no value (Null) in the Terminate Date field, and therefore would not be included. To include null values, you must enter the character "@" at the START WITH FIRST// prompt. Remember that any field which is not required at entry may contain the null value.

Specifying numeric and date ranges is straightforward since the meaning of the minimum and maximum value is clear. If the field values are members of a set and you want to select only one item from the set, you must enter the long name of the item in the START WITH and GO TO fields. You cannot sort on a word processing field. Specifying ranges on a free text field, or more accurately, knowing the result of a free text select range is less straightforward. The sequence of free text data values follows the American Standard Code for Information Interchange

(ASCII) assigned sequence. From the lowest to the highest value, the characters have been valued as follows:

- Certain special characters (0 - 47)
- Numbers (48 - 58)
- Other special characters (59 - 64)
- Capital letters (65 - 90)
- Lower-case letters (98 - 122)

When you enter your selection entries, you must consider this hierarchy. Appendix C illustrates the ASCII character set and the octal (internal computer representation) and decimal values of each character. The sequence implied in the figure follows the order of the decimal code representation of each character. Characters with decimal codes 0 through 31 are terminal control characters.

10.0 EXAMPLE EDIT SESSIONS

The previous sections have discussed, in general terms, how users interact with FileMan, the Kernel, and NOHIMS. This section shows how those concepts are applied in sample edit sessions. The following prompt sequences are taken from "live" sessions with NOHIMS. They show most of FileMan's prompt sequence conventions, field types, lookups, and use of multiples. While the data used in the following examples is "live" data, you should not be too concerned with the content of the data but rather concentrate on the techniques and rules given to manipulate that data.

The examples in this section are constructed using input sequences from the Environmental Exposure (EE) module and the Medical Exam Scheduling (MES) module. Specifically, the Collection Instrument file, Product file, and Survey Action file are used in the examples from the EE module, while the Medical Program subfile of the Employee file is used in the example from the MES module. Throughout the example, references are given to previous Primer sections where you will find more detailed discussions. The circled numbers in Figures 10-1 through 10-6 refer to notes that follow. In these figures, the user's response to each prompt is underlined.

```
Select COLLECTION INSTRUMENT SERIAL NUMBER: 2345  (1)
   ARE YOU ADDING '2345' AS A NEW COLLECTION INSTRUMENT (THE 11TH)? N  (NO) ??
Select COLLECTION INSTRUMENT SERIAL NUMBER: 2324 (2)        Y-7  GENRAD  NOISE DOSIMETER  A
        ...OK? YES//__  (YES)
SERIAL NUMBER: 2324  // @ (3)
   SURE YOU WANT TO DELETE THE ENTIRE '2324  ' COLLECTION INSTRUMENT? Y  (YES)
```

FIGURE 10-1
EXAMPLE EDIT SEQUENCE #1

```
Select INSPECTOR NAME: HAMILTON          ACTIVE
NAME: HAMILTON// ^

Select INSPECTOR NAME: 'HAMILTON'
   ARE YOU ADDING 'HAMILTON' AS A NEW INSPECTOR (THE 9TH)?  ??
```

FIGURE 8-3
ADDING A SECOND ENTRY

NOTES FOR FIGURE 10-1

1. The word "Select" in this prompt indicates that the entry is a multiple. Since this entry is not already in the multiple, the system prompts the user as to whether the entry should be added (Sections 6.3, 8.3.2).

2. A different entry number is entered, one which already exists in the multiple. The system responds by displaying additional information about the entry and asks the user if he/she wants to select that existing entry. The user accepts the "yes" default by entering just a carriage return (Section 8.3.2).

3. At this prompt the user has entered the delete symbol "@" which tells the system to remove the entry from the multiple. The system prompts the user for verification before deleting the entry (Section 8.3.3).

```
Select COLLECTION INSTRUMENT SERIAL NUMBER: (1) 2345          R-09  GENRAD  NOISE
DOSIMETER  A
THIS INSTRUMENT WAS SENT OUT AS FOLLOWS:

Select CALIBRATION DATE: ?
 ANSWER WITH CALIBRATION DATE
   YOU MAY ENTER A NEW CALIBRATION DATE, IF YOU WISH
Select CALIBRATION DATE: T-11   MAR 28, 1987 (2)
   ARE YOU ADDING A NEW CALIBRATION DATE (THE 1ST FOR THIS COLLECTION INSTRUMENT
)? Y  (YES)
CALIBRATION DATE: MAR 28,1987//
CALIBRATION AGENCY: NAVY LAB - SAN DIEGO//
DATE SENT: T-30  (MAR 9, 1987)
CALIBRATOR NAME:
ACTUAL COST:
DATE RECEIVED: T// @ (3)
Required field missing, multiple entry not fully processed,
or field did not pass condition check.
Enter 'C' or null to continue processing this entry
     or enter 'D' to delete this entry: C// (4)
ACTUAL COST: 15.00
DATE RECEIVED: T//  (APR 8, 1987)
NEXT CALIBRATION DATE: 3/87  (MAR 1987) (5)
USUAL CALIBRATION AGENCY: NAVY LAB - SAN DIEGO
        //
USUAL COST: 15.00
TURNAROUND TIME IN DAYS: 27
USUAL POINT OF CONTACT: RALPH KING
USUAL CONTACT PHONE 1: ?
     ANSWER MUST BE 4-20 CHARACTERS IN LENGTH
USUAL CONTACT PHONE 1: 703-0999-777
USUAL CONTACT PHONE 2:
LOCAL STORAGE LOCATION: OSH LAB//
Required field missing, multiple entry not fully processed,
or field did not pass condition check.
NEXT CALIBRATION DATE: MAR 1987// 3/25,87  (MAR 25, 1987) (5)
USUAL CALIBRATION AGENCY: NAVY LAB - SAN DIEGO
        // ^
Required field missing, multiple entry not fully processed,
or field did not pass condition check.
NEXT CALIBRATION DATE: MAR 25,1987// 3/88  (MAR 1988) (5)
USUAL CALIBRATION AGENCY: NAVY LAB - SAN DIEGO
        // ^ (6)
```

FIGURE 10-2
EXAMPLE EDIT SEQUENCE #2

```
NOW DESCRIBE THE LAST CALIBRATION FOR THIS INSTRUMENT
Select CALIBRATION DATE: ?  (5)
 ANSWER WITH CALIBRATION DATE
   YOU MAY ENTER A NEW CALIBRATION DATE, IF YOU WISH
EXAMPLES OF VALID DATES:
  JAN 22 1957 or 22 JAN 57 or 1/22/57 or 012257
  T   (FOR TODAY),  T+1 (FOR TOMORROW),  T+2,  T+7,  etc.
  T-1 (FOR YESTERDAY),  T-3W (3 WEEKS AGO), etc.
IF THE YEAR IS OMITTED, THE COMPUTER USES THE CURRENT YEAR
YOU MAY OMIT THE PRECISE DAY, AS:  JAN, 1957

Select CALIBRATION DATE: T-9   MAR 30, 1987  (5)
   ARE YOU ADDING A NEW CALIBRATION DATE (THE 1ST FOR THIS COLLECTION INSTRUMENT)? Y
  (YES)
  CALIBRATION DATE: MAR 30,1987// T-11 (6) NO EDITING!!
  CALIBRATION DATE: MAR 30,1987// @ (6)
   SURE YOU WANT TO DELETE THE ENTIRE CALIBRATION DATE? Y  (YES)
NEXT CALIBRATION DATE:_
Required field missing, multiple entry not fully processed,
or field did not pass condition check.
Enter 'C' or null to continue processing this entry
     or enter 'D' to delete this entry: C//_  (7)
INSTRUMENT CODE: R-09
TYPE: NOISE DOSIMETER//_
MANUFACTURER: GENRAD// ?
     Enter the MANUFACTURER name in 3-30 characters
MANUFACTURER: GENRAD//_
MODEL NUMBER: YWS876//_
LOCAL STORAGE LOCATION: ^
Required field missing, multiple entry not fully processed,
or field did not pass condition check.
Enter 'C' or null to continue processing this entry
     or enter 'D' to delete this entry: C//_
LOCAL STORAGE LOCATION: OSH LAB  (8)
METHOD OF CALIBRATION: ^  (9)
```

FIGURE 10-2
EXAMPLE EDIT SEQUENCE #2 (CONCLUDED)

NOTES FOR FIGURE 10-2

1. As seen in Example Sequence 1, this prompt refers to a multiple. In this prompt sequence, the user is adding a new entry to the multiple (Sections 6.3, 8.3.2).

2. When the user is uncertain how to respond to a prompt, he/she can enter a question mark to get help (Section 5.3). In this case, the system displays a list of candidates from which the user may select. When such a list is displayed, it means that the field is a pointer field and the "pointed to" file contains the displayed entries (Section 4.7).

3. Another type of help message is shown in this prompt sequence (Section 5.3). This is a free text field and the user is informed as to the type of data that may be entered (Section 4.2).

4. This prompt sequence illustrates how the user may enter partial data when the field is a pointer field (Sections 4.7, 6.2). The help message tells the user which entries already exist in the "pointed to" file. The user may then enter the leading characters of one of the entries and the system matches the input and displays the remaining characters of the entry.

5. This prompt sequence is an example of a typical date field help message. The system displays the different formats available to the user for entering a date (Sections 4.4, 5.3).

6. There are occasional fields that may not be changed during an entry sequence. If the user tries to edit such a field, the system displays a warning message that editing is not allowed on that field. However, the user may delete the data in the field by entering the delete symbol "@" (Section 5.3).

7. In some entry sequences, the user is required to enter data into certain fields (Section 5.4). If the user has "nulled through" the prompts for these required fields, the system displays the message shown in this prompt sequence (Section 5.3). The user then has the option of deleting the data in all the fields in the entry sequence or entering data in the required fields. In this example, the user has chosen to continue entering the required data.

NOTES FOR FIGURE 10-2
(CONCLUDED)

8. This prompt is for the required field referred to in Note 7. The user must enter data into this field before the system will allow him/her to continue (Section 5.4).

9. The user may terminate an entry sequence before the end by entering an "^" (Section 5.3).

```
Select COLLECTION INSTRUMENT SERIAL NUMBER: (1) 2345          R-09  GENRAD  NOISE
DOSIMETER  A
THIS INSTRUMENT WAS SENT OUT AS FOLLOWS:

Select CALIBRATION DATE: ?
 ANSWER WITH CALIBRATION DATE
   YOU MAY ENTER A NEW CALIBRATION DATE, IF YOU WISH
Select CALIBRATION DATE: T-11   MAR 28, 1987 (2)
   ARE YOU ADDING A NEW CALIBRATION DATE (THE 1ST FOR THIS COLLECTION INSTRUMENT
)? Y  (YES)
CALIBRATION DATE: MAR 28,1987//
CALIBRATION AGENCY: NAVY LAB - SAN DIEGO//
DATE SENT: T-30  (MAR 9, 1987)
CALIBRATOR NAME:
ACTUAL COST:
DATE RECEIVED: T// @ (3)
Required field missing, multiple entry not fully processed,
or field did not pass condition check.
Enter 'C' or null to continue processing this entry
     or enter 'D' to delete this entry: C// (4)
ACTUAL COST: 16.00
DATE RECEIVED: T//  (APR 8, 1987)
NEXT CALIBRATION DATE: 3/87  (MAR 1987) (5)
USUAL CALIBRATION AGENCY: NAVY LAB - SAN DIEGO
        //
USUAL COST: 15.00
TURNAROUND TIME IN DAYS: 27
USUAL POINT OF CONTACT: RALPH KING
USUAL CONTACT PHONE 1: ?
     ANSWER MUST BE 4-20 CHARACTERS IN LENGTH
USUAL CONTACT PHONE 1: 703-0999-777
USUAL CONTACT PHONE 2:
LOCAL STORAGE LOCATION: OSH LAB//
Required field missing, multiple entry not fully processed,
or field did not pass condition check.
NEXT CALIBRATION DATE: MAR 1987// 3/25,87  (MAR 25, 1987) (5)
USUAL CALIBRATION AGENCY: NAVY LAB - SAN DIEGO
        //
Required field missing, multiple entry not fully processed,
or field did not pass condition check.
NEXT CALIBRATION DATE: MAR 25,1987// 3/88  (MAR 1988) (5)
USUAL CALIBRATION AGENCY: NAVY LAB - SAN DIEGO
        // (6)
```

FIGURE 10-3
EXAMPLE EDIT SEQUENCE #3

NOTES FOR FIGURE 10-3

1. This prompt illustrates the use of the space bar in response to a prompt. When a space is entered following a prompt, the system brings up the last entry that was edited and displays the .01 field along with other identifying information (Section 6.3).

2. The date entered here will be used in a consistency check in a later example (Section 5.4). Note the use of the letter "T" to stand for today's date (Section 4.4).

3. The delete symbol "@" may be used to delete a default just like it is used to delete other data from a field (Section 5.3).

4. This message warns the user that a required field is missing or a field does not pass a consistency check (Section 5.4).

5. This date must be later than the date in field "Last Calibration Date." This is an example of a consistency check (Section 5.4). The user must enter a later date before he/she can continue with the edit sequence. An imprecise date (one that lacks the day portion of the date) may be entered (Section 4.4).

6. The user has ended the edit sequence with an "^", thereby skipping any fields that may come after the current one (Section 5.3).

```
EMPLOYEE: HA,N  HAND,NORMAN E (1)
                M  AGCA7234233 426588010    SHOP: 309          (MAF)
        ...OK? YES//_  (YES)
HAND,NORMAN E   DOB: SEP 20,1929  OCC: 0081  FIREFIGHTER  SHIFT:
DEVICE:_(2)RIGHT MARGIN: 80//_ (2)


PROGRAM HISTORY                                  APR  8,1987  09:58    PAGE 1
NAME                              SSN       BADGE       SHIFT    BIRTHDATE
  OCCUP  JOB TITLE
  AGENCY           SHOP
--------------------------------------------------------------------------------

HAND,NORMAN E                   426588010 AGCA7234233          SEP 20,1929
  0081   FIREFIGHTER
  MAF              309

Select MEDICAL PROGRAM NAME: ?(3)
 ANSWER WITH MEDICAL PROGRAM NAME, OR PROGRAM CODE
 DO YOU WANT THE ENTIRE MEDICAL PROGRAM LIST? N  (NO)
Select MEDICAL PROGRAM NAME: SOLVENTS(3)                    25
        ...OK? YES//_  (YES)

Do you want to ENROLL this Employee in this Program? Y
REASON ENROLLED: ?

     ENROLLMENT REASONS
 ANSWER WITH REASON FOR MEDICAL VISIT/EXAM NAME
CHOOSE FROM:
   CHANGE IN MS REQUIREMENTS
   CHANGE IN OCCUPATION
   INJURY/ILLNESS
   NEW HIRE
   OCCUPATIONAL EXPOSURE
   SPECIAL REQUEST

REASON ENROLLED: SPECIAL REQUEST  (4)
ENROLLMENT TYPE: ? (5)
     MUST BE REQUIRED IF REQUIRED FOR OCCUPATION, OTHERWISE MUST NOT BE REQUIRED

CHOOSE FROM:
       1        REQUIRED
       2        JOB RELATED
       3        PERSONAL
ENROLLMENT TYPE: 3  PERSONAL (5)
REEXAM FREQUENCY: ?
     THIS IS THE NUMBER OF MONTHS BETWEEN MEDICAL EXAMS.

Acceptable entries for this program are: 0 12
REEXAM FREQUENCY: 12
DATE NEXT EXAM: SEP 20, 1987//_  (SEP 20, 1987) (6)
DATE EXPOSURE REPORTED: _
NEXT EXAM TYPE: ?? (7)
CHOOSE FROM:
       B        BASELINE
       P        PERIODIC
       R        REMOVAL
NEXT EXAM TYPE: B  BASELINE
```

FIGURE 10-4
EXAMPLE EDIT SEQUENCE #4

```
Select MEDICAL PROGRAM NAME: ?
 ANSWER WITH MEDICAL PROGRAM NAME, OR PROGRAM CODE
 DO YOU WANT THE ENTIRE MEDICAL PROGRAM LIST? N  (NO) (8)
Select MEDICAL PROGRAM NAME: ?
 ANSWER WITH MEDICAL PROGRAM NAME, OR PROGRAM CODE
 DO YOU WANT THE ENTIRE MEDICAL PROGRAM LIST? Y  (YES) (9)
CHOOSE FROM:
   15 HOUR HEARING EXAM                                  79
   40 HOUR HEARING EXAM                                  89
   ABRASIVE BLASTING                                     01
   ASBESTOS                                              02
   BENZENE                                               33
   CHROMIUM                                              08
   CRANE AND CONSTRUCTION EXAM                           35
   CRANE AND CONSTRUCTION S.P.L.E                        39
   DETERGENTS                                            18
   DIVERS EXAM                                           32
   FOOD HANDLERS EXAM                                    21
   HEARING                                               09
   HEAVY METAL DUSTS                                     31
   HYDROCARBONS                                          10
   ISOCYANATES                                           07
   LEAD                                                  04
   MERCURY                                               05
   MOCA                                                  03
   NICKEL                                                14
   RESPIRATORY PROTECTION                                40
   SIGHT CONSERVATION                                    16
   '^' TO STOP: ^ (9)
Select MEDICAL PROGRAM NAME:_
```

FIGURE 10-4
EXAMPLE EDIT SEQUENCE #4 (CONCLUDED)

NOTES FOR FIGURE 10-4

1. This prompt sequence illustrates the use of a special entry format when doing a lookup on a person's name (Section 6.3). The user may enter a few letters of the last name followed by a comma and then a few letters of the person's first name. The system will try to match existing entries with the letters entered by the user (Section 6.2).

2. Whenever the system prints a report on a peripheral device or displays a report on a screen, the user is prompted for a device type and the location of the right margin (Section 9.2). If the user enters a "null" for device type, the report is printed or displayed on the current device, in this case the video display terminal.

3. When a prompt is for a pointer field, the user may enter the first few letters of the desired entry (Section 4.7). The system will attempt to match those letters with the first letters of any existing entries in the "pointed to" file. When it finds a match, it displays the remaining letters of the entry (Sections 6.2, 6.3).

4. When a field is a "set" field, the user may also type a partial entry (Section 4.5). The system will match the letters against the existing entries in the set and display the remaining letters if it finds a match.

5. Another way of selecting an entry from a set field is by entering the code for the entry (Section 4.5). The code in this case is a number. The user has therefore entered the number of the desired entry instead of the entry itself.

6. To accept a default value for a field, the user enters only a carriage return (Section 5.3). In this case, the system responds by displaying the date in parenthesis to inform the user that the date has been accepted for this field.

7. If the user enters just a carriage return when no default has been displayed (and the field is a required field), the system displays two question marks and rings a bell to inform the user that he/she must enter data for the field (Section 5.4).

NOTES FOR FIGURE 10-4
(CONCLUDED)

8. When the help message contains a long list of possible entries, the user is asked if he/she wants to see the list. The user may choose not to see the list by entering "N" for "NO" after the question (Section 6.3).

9. If the user wants to see the list, he/she should enter a "Y" for "YES". The system will display a screenful of candidates and then prompt the user to continue. If the user wants to stop the system from listing any other entries, he/she should enter an "^" and no other entries will be displayed (Section 6.3).

```
Select PRODUCT TRADE NAME: PYRITE (1)
   ARE YOU ADDING 'PYRITE' AS A NEW PRODUCT (THE 30TH)? Y  (YES)
TRADE NAME: PYRITE// EDISON PYRITE (2)
Select SYNONYM: FOOLS GPOLD (3)
   ARE YOU ADDING 'FOOLS GPOLD' AS A NEW SYNONYM (THE 1ST FOR THIS PRODUCT)? Y
  (YES)
Select SYNONYM: _ FOOLS GPOLD (4)
  SYNONYM: FOOLS GPOLD// FOOLS GOLD (5)
Select SYNONYM: GOLDEN CRYSTALS IN QUARTZ
   ARE YOU ADDING 'GOLDEN CRYSTALS IN QUARTZ' AS
       A NEW SYNONYM (THE 2ND FOR THIS PRODUCT)? Y  (YES)
Select SYNONYM: _ GOLDEN CRYSTALS IN QUARTZ
  SYNONYM: GOLDEN CRYSTALS IN QUARTZ  Replace TALS With TAL (6)
  Replace _
   GOLDEN CRYSTAL IN QUARTZ
Select SYNONYM: TURMEROS
   ARE YOU ADDING 'TURMEROS' AS A NEW SYNONYM (THE 3RD FOR THIS PRODUCT)? Y
  (YES)
Select SYNONYM: TURMEROS (7)
  SYNONYM: TURMEROS// @ (7)
   SURE YOU WANT TO DELETE THE ENTIRE 'TURMEROS' SYNONYM? Y  (YES)
Select SYNONYM:_
Select STRESSOR: ?
 ANSWER WITH STRESSOR
   YOU MAY ENTER A NEW STRESSOR, IF YOU WISH
 ANSWER WITH STRESSOR CLASSIFICATION, OR STRIPPED SYN, OR NIOSH NUMBER, OR
     CAS NUMBER
 DO YOU WANT THE ENTIRE 248-ENTRY STRESSOR LIST? _
Select STRESSOR:_

Use one of the following searches to set HMIS record:


MATERIAL NAME
STOCK NUMBER
NIIN NUMBER
CHEMICAL NAME
MANUFACTURER
DISTRIBUTOR
SPECIFICATION

SEARCH CRITERIA:_
Select PRODUCT TRADE NAME:
```

FIGURE 10-5
EXAMPLE EDIT SEQUENCE #5

NOTES FOR FIGURE 10-5

1. When a new entry is added to a multiple as in this example, the user must enter the entire name. Partial entry is not permitted here (Section 8.3.2).

2. After the new entry has been added to the multiple, the user is given the opportunity to edit the entry name (Secton 5.3).

3. Here the user has added a new entry to a multiple with a misspelling in the name (Section 8.3.2). Later notes will explain how to fix this misspelling.

4. The user can bring up the last entry made by entering a space followed by a carriage return.

5. After the misspelled entry has been selected as described in Note 4, the user has the opportunity to correct the misspelling. Since the entry is relatively short, the system requires the user to re-enter the entire name (Section 5.3).

6. To correct an entry that is fairly long, the user is given the opportunity to enter just the misspelled part of the entry and then enter the correct spelling for just that part. The system then displays the corrected entry (Section 5.3).

7. To delete an entry from a multiple, the user must first select the entry to be deleted. In this case, the user selects the entry by entering just the first few letters of the entry. The system finds the desired entry and displays it to the user. The user then deletes the entry with the delete symbol "@" (Section 8.3.3).

```
SURVEY ACTION ID NUMBER: NEW
  ARE YOU ADDING 'NEW' AS A NEW SURVEY ACTION? Y  (YES)
LOCATION: YI.FOUNDRY  YI.FOUNDRY
        ...OK? YES//_  (YES)
OPERATION: _
SHOP: _
INVESTIGATOR: _                                        (1)
DESCRIPTION:
  1>THE REQUIRED PERSONAL PROTECTIVE EQUIPMENTR WAS NOT BEING
  2>WORN BY TWO OF THE FOUR EMPLOYEES.  I TOLD THE SUPERVISOR
  3:ED YURA THAT I WOULD REINVESTIGATE IN THREE DAYS TO ENSURE THAT HE WAS
  4>PROTECTING THE WORKER IN HIS SHOP BETTER.
  5>_
EDIT Option: _
FOLLOWUP DATE: T
EXAMPLES OF VALID DATES:
  JAN 22 1987 or 22 JAN 87 or 1/22/37 or 012287
  T   (FOR TODAY),  T+1 (FOR TOMORROW),  T+2,  T+7,  etc.
  T-1 (FOR YESTERDAY),  T-30 (3 WEEKS AGO), etc.
IF THE YEAR IS OMITTED, THE COMPUTER USES THE CURRENT YEAR

FOLLOWUP DATE: T+1  (APR 11, 1987)
Required field missing, multiple entry not fully processed,
or field did not pass condition check.
Enter 'C' or null to continue processing this entry  (2)
    or enter 'D' to delete this entry: C//_
OPERATION: WEL**  (3)
 ANSWER WITH OPERATION CODE, OR NAME, OR SUBCLASS, OR CLASS
OPERATION: WELDING  WDP012        NOT OPS.TORCHING.SINGEING  (4)
SHOP: 944  (5)
     1   944              WOODWORKERS & INSULATORS SHOP  IN:MINE
     2   944              WOODWORKING SECTION  IN:MAGMI
     3   944.1              WOODWORKERS  IN:MINE
     4   944.1              WOODWORKING SHOP  IN:MAGMI
     5   944.2              PLASTICS SHOP  IN:MINE
TYPE '^' TO STOP, OR
CHOOSE 1-5: 1
INVESTIGATOR: WK.P  (6)
   ARE YOU ADDING 'WK.P' AS A NEW SURVEY MONITOR (THE 8TH)? N  (NO)**
 ANSWER WITH SURVEY MONITOR NAME
   YOU MAY ENTER A NEW SURVEY MONITOR, IF YOU WISH
      ANSWER MUST BE 3-30 CHARACTERS IN LENGTH
INVESTIGATOR: ?
 ANSWER WITH SURVEY MONITOR NAME
CHOOSE FROM:
   ADRIACHON,MICHEAL
   HAWKINS,CHERYL
   JACOBS,DEN       MINST      00230
   JAGER,RICK       DMRC       09222
   NOEL,MICHAEL       MINE       34555
   SUNBERG,RICK       MARDAC     04589
   WELLS ,BILL      DAVHOSPOAK      43444
   YOU MAY ENTER A NEW SURVEY MONITOR, IF YOU WISH
      ANSWER MUST BE 3-30 CHARACTERS IN LENGTH
INVESTIGATOR: JAGER,RICK          DMRC      09222  (7)
DESCRIPTION:
  1>THE REQUIRED PERSONAL PROTECTIVE EQUIPMENTR WAS NOT BEING
  2>WORN BY TWO OF THE FOUR EMPLOYEES.  I TOLD THE SUPERVISOR
  3:ED YURA THAT I WOULD REINVESTIGATE IN THREE DAYS TO ENSURE THAT HE WAS
  4>PROTECTING THE WORKER IN HIS SHOP BETTER.
EDIT Option: 1  (8)
  1>THE REQUIRED PERSONAL PROTECTIVE EQUIPMENTR WAS NOT BEING
  Replace NTR with NT  Replace_
   THE REQUIRED PERSONAL PROTECTIVE EQUIPMENT WAS NOT BEING
Edit line: _
EDIT Option: _
FOLLOWUP DATE: APR 11,1987//_
   SURVEY ACTION NUMBER ASSIGNED: 1-87
```

FIGURE 10-6
SAMPLE EDIT SEQUENCE #6

NOTES FOR FIGURE 10-6

1. This is an example of a word processing field (Section 4.6). The user has entered four lines of text. The system always prompts the user with a line number at the beginning of each line of text. To terminate the entry, the user enters a carriage return at the beginning of the line, as in line number 5.

2. The system is warning the user here that a required field is missing data or a field has not passed a consistency check (Section 5.4). The system will then display the fields in error.

3. When a user tries to enter data in a pointer field and the "pointed to" file does not contain that entry, the system displays two question marks and rings a bell (unless LAYGO is allowed, which is not the case in this example) (Section 6.3).

4. In this prompt sequence, the user has selected an entry in a pointer field by entering just the first few letters of the desired entry (Sections 6.2, 6.3).

5. Partial entries are also allowed when the data in the pointer field is numeric. Here is an example of a partial entry on a numeric pointer field. In this case, there are many matches to the numbers entered so the system displays all the entries that match. The user must select which of the possible entries is the one desired (Sections 6.2, 6.3).

6. In this example, the user has tried to use the abbreviated way of selecting a name by entering a few letters of the first and last names. However, this field is not defined as a name field so this approach won't work (Section 6.2).

7. Instead of entering partial first and last names, the user may enter a few letters of just the last name and the system will match those letters against the existing entries (Sections 6.2, 6.3).

8. To edit a word processing field, the user enters the line number of the line he/she wants to edit. The system then asks the user which letters to replace with new ones (Section 4.6).

APPENDIX A
QUICK REFERENCE GUIDE FOR STANDARD NOHIMS MESSAGES

STANDARD NOHIMS MESSAGE	*POSSIBLE CAUSES*	ACTION TO TAKE
Error has occured ERROR at 9:00 AM	Bug in software	Do not continue. Contact System Manager
?? (WITH BELL)	Field as entered contains: 1. Too many characters 2. Too few characters 3. Number too large 4. Number too small 5. Value not contained in set 6. Term not contained in "pointed to" file, and LAYGO is not allowed 7. Value that violates format check on data--requires certain characters, e.g., value must begin with "TIMS-" 8. Date too early 9. Date too far in future, or too recent	*Enter "?" and assess the problem* with your data Ensure that the value you have entered is correct If correct value cannot be entered, contact System Manager or *supervisor* DO NOT CONTINUE
NO EDITING!!	The entry in this multiple cannot be edited	*If you must change the* value of this field, you must delete this entry and add the corrected value into the multiple
Required field missing, multiple entry not fully processed, field did not pass condition check. *Enter 'C' or null to continue processing this entry* or enter 'D' to delete this enntry: C//	Field value as entered: 1. Was null when it is a required field in a multiple or in a file entry 2. Is not consistent with another value in the entry or already on file	1. Complete the entry of the missing data 2. Check the value of each field that may be in error Enter RETURN to be prompted for the missing value If your entry appears correct and you cannot determine the error the system is signaling, delete the entry and contact the System Manager or your supervisor

QUICK REFERENCE GUIDE FOR STANDARD NOHIMS MESSAGES
(CONTINUED)

STANDARD NOHIMS MESSAGE	POSSIBLE CAUSES	ACTION TO TAKE
Required field missing, multiple entry not fully processed, field did not pass condition check.	Field value as entered: 1. Was null when it is a required field in a multiple or in an entry 2. Is not consistent with another value in the entry or already on file	1. Complete the entry of the missing data 2. Check the value of each field that may be in error If your entry appears correct and you cannot determine the error the system is signaling, contact the System Manager or your supervisor
TYPE ' ' TO STOP, OR CHOOSE 1-5:	More than one match was found, you have a choice of the items listed	If TYPE ' ' TO STOP is shown, you may see more selections by entering RETURN You may choose one of the items from the list by entering the number displayed next to your selection
...OK? YES//	You have selected an entry from a "pointed to" file	If this is entry is the value you wish to enter, press RETURN, or enter "Y". If the value is not the one you wish, enter "N"

QUICK REFERENCE GUIDE FOR STANDARD NOHIMS SYSTEM MESSAGES
(CONCLUDED)

STANDARD NOHIMS MESSAGE	POSSIBLE CAUSES	ACTION TO TAKE
SURE YOU WANT TO DELETE THE ENTIRE file/subfile ?	You have entered "@" to delete an entry in a file or multiple	If you are certain that you are deleting the entry you wish, enter "Y", otherwise enter RETURN or "N"
ARE YOU ADDING entry name AS A NEW file/subfile ?	The value entered does not match an entry in the file or subfile NOHIMS wants to create a new entry for your input value	Enter "Y" to create a new entry or enter RETURN or "N" to avoid creating a new entry and to return to the original prompt
DO YOU WANT THE ENTIRE file LIST?	In response to your entry of "?" for a pointer field, NOHIMS asks if you want to look at the values in the "pointed to" file	Enter "Y" to look at the values or enter RETURN or "N" to return to the original prompt
$	You have exited NOHIMS	Logoff and follow your site's logon procedures

APPENDIX B
GLOSSARY

Add - To create a new entry in a file, or a new entry in a multiple of a file. This is done by selecting an "entry" option from the menu.

Application File - A file in NOHIMS into which data is entered or modified on a regular basis. Application files exist to meet the primary objectives of the NOHIMS processing.

Character String - A series of numbers, letters, or punctuation that is entered contiguously followed by a RETURN key. Character strings are "free text" data.

Computed - A FileMan data type for a field value which is created only at the time a report or display is created. The value of the field is computed from other data in the data base.

Controlled Vocabulary - A set of terms which comprise the only values that may be used for a data element. In NOHIMS, some vocabularies are controlled nationally, e.g., Stressors; others are controlled by each site, e.g., Respirators. Within the vocabularies that each site controls, some must be pre-defined, and others may be added to as new values are needed (LAYGO), e.g., Location.

Consistency Check - A type of error detection performed on the entered data that ensures that a field's value is valid in relation to the value of some other field, e.g. when termination date of an employee is entered, it must not precede the hire date on file for that employee.

Cross-Reference - An index into the entries in a file or subfile based on the value of a specific data element contained in the entry.

Data Base - A set of files related to a system. All automated data that is managed by the NOHIMS system is part of the NOHIMS data base, including both application and reference files.

Data Element - A specific member of a file or subfile which refers to a specific thing. For instance, Monday is the name of a specific member of the days of the week. The "day of the week" is the data element, "Monday" is the value.

Date - A FileMan data type that contains the month, day, and year of some event, or just the month and year if imprecise dates are allowed. There are several formats for entering dates into NOHIMS. (Section 4.4)

Default - The value that the system displays to the user as the expected entry for a field.

Delete - To remove a field's value or to remove a file entry from the data base.

Device - A console, terminal, printer, tape drive, or other input/output unit connected to the computer system on a unique communication line. In NOHIMS, each device is addressed by a unique designation, e.g., "TTA -".

Display - To show data on a terminal screen.

Edit - To modify a field's value, or the value of several fields in a prompt sequence.

Edit Check - A type of error detection performed on the entered data to ensure that the value entered is of the correct type (set, number, free text, date, pointer, or word-processing) and that its value is within allowable limits, e.g., birthdate is not greater than "today", SSN does not exceed nine characters.

Entry - A specific collection of data that constitutes one instance of a file's contents, e.g., each employee is an entry in the Employee file. Entries are similar to file folders in a manual system. Entries contain related data on some topic. Some people may think of an entry as akin to the word "record" as used in other automated systems.

Field - A specific data item stored within a file, e.g., the employee's birthdate is a field in the Employee file.

File - A collection of entries similar to one another in purpose, form, and content. Each file in NOHIMS is described in the FileMan data dictionary. The FileMan data dictionary provides a description of each file and its contents as well as rules governing the input and output conventions that apply to each field in the file.

FileMan - The Veterans Administration's data base management package used to develop NOHIMS.

Free Text - A FileMan data type which permits entry of alphanumeric characters and certain special characters. Free text data is composed of character strings. Generally, free text data will be checked for its length at the time of entry and, if it is either too short or too long, the data will be deemed in error.

Identification Field (ID field) - The primary key field of one entry in a file. In NOHIMS some files require more than one field to identify a record uniquely. One of the fields required will always be primary, however, and this field is the ID field of the file. The employee name is the ID field for the Employee file. To identify a file entry uniquely, since names may be the same for two or more persons, requires the use of a secondary field, e.g. social security number (SSN).

Kernel - A package of utilities written by the Veterans Administration, used in NOHIMS for menu management, task management, security control, electronic mail, etc.

Learn-as-you-go (LAYGO) - To create a new file entry during a lookup operation. When a user attempts to identify a file entry and the entry is not already in the file, NOHIMS sometimes allows the user to add the new value.

Locked - The status of a file or a subfile that indicates that another user is updating the entry. "Locking" is used to ensure that the data base is updated by only one user at a time.

Logon - The process by which the user gains access to the NOHIMS system from a terminal or keyboard-printer. The logon operation requires the user to identify himself or herself; security features of NOHIMS then control the options which may be performed by the user on that specific device.

Lookup - The process by which the user identifies the file or subfile entry of interest. Lookups are done during data entry and edit operations and, in some cases, in the process of identifying report output contents.

Menu - The list of options that the user may perform. Menus are constructed in a tree fashion, where the choice of one option may lead to another set of choices. For instance, when the user selects the Environmental Exposure module, the options from which he may then choose are - Boundary Management, Survey Entry, Monitoring Planning, Equipment Calibration, Sample Tracking, etc. When the Sample Tracking option is selected, the user then has a choice of the following options - Send Out Samples, Receive Samples, Overdue Samples Reports, Outstanding Samples Report, etc. Selecting any one of these options begins the function described by the option name. This type of option, from which the user immediately enters a function of the system, is sometimes called a "bottom-level option" meaning that there are no options beneath it in the path through the menu tree.

Module - A group of related automated processes. The modules of the NOHIMS are - Administration, Medical Exam Scheduling, Safety and Health Training, Injury and Compensation Claims, Environmental Exposure, Hazardous Materials Control, and Hazard Deficiency Abatement.

Multiple - A repeating set of data, which contains one or more fields that are related to one another. For example, in the Product file, the Stressor field is a multiple (also known as subfile) because each product contains one or more stressors. The user is allowed to enter each stressor into the Stressors multiple, with no limit to the number of entries that may be made. Because there is no limit to the number of stressors that may be entered, the user is free to describe the stressor content of each product with as much detail as necessary.

Null Through - The act of entering no data into a field. This is done by entering a RETURN at the prompt. When a default value is displayed, nulling through a prompt has the effect of entering the default value. When no default is shown, nulling through has the effect of leaving the field empty. NOHIMS considers empty fields to contain the value "null", hence the term "null through." Note - When a field is required, the user will not be able to leave the field empty.

Number - A data type which permits the entry of real numbers. Numbers are checked to ensure that their value is within the appropriate range and that the maximum number of decimal places permitted is not exceeded. Some data that is composed solely of numeric digits, e.g., SSN, is not considered to be number type data in NOHIMS because it is not used in a numeric calculation.

Option - An item in an NOHIMS menu. Choosing an option may lead the user to a new set of option choices, or it may lead the user directly into an NOHIMS function. Examples of the former are: Environmental Exposure or Boundary Management; examples of the latter are: Over MSAL List or Walkthrough Data Entry.

Partial Name - A fragment of a person's name, e.g., "HAW" is a fragment of the name "HAWLEY,BARBARA". Partial names also include the entry of a fragment of the lastname, and a fragment of the firstname, e.g., "HAW,BA" is also a partial name for "HAWLEY,BARBARA". Note that if the comma following the lastname is entered with no firstname fragment, NOHIMS will not see the lastname as a partial, but will consider it to be the entire lastname of the person, e.g., to enter "HAWLEY,BARBARA" in this fashion you must enter "HAWLEY,". The comma denotes a complete lastname entry, when the firstname is not entered. NOHIMS considers all strings of the type "AA,A" to be partial names, so that the entry of "JOHNS,MARK" will find "JOHNS,MARK" as well as "JOHNSON,MARK" and "JOHNSON,MARKUS". In this case, the user will select the desired entry.

Pointer - A FileMan data type in which the permissible values for a field are constrained by the contents of another file. The referenced file is the "pointed to" file, and the field being entered is stored in the "pointing" file. In some cases, e.g., locations, the user is permitted to enter new values into the "pointed-to" file at the time he or she enters the pointer value into the "pointing" file being updated. This is called LAYGOing an entry into the "pointed-to" file.

Print - To write output on a hard-copy device. Many reports in NOHIMS are based on an eighty column width so the user may choose to direct the output to either a screen (display) or to a hard-copy device (print). Those reports that contain lines longer than eighty columns are better printed rather than displayed, unless the display device is capable of accommodating greater than an eighty column line.

Process - An activity performed by the system which may depend on user interaction or may be automatically invoked. Processes involving the user include data entry and edit, and the printing of reports.

Prompt Sequence - An ordered series of questions for which NOHIMS expects a reply from the user. Usually the term "prompt sequence" refers to the series of questions that the user is asked when an enter/edit transaction is being entered. It also refers to the series of questions to which the user must reply to get a report or display. Each question is referred to as a "prompt", hence the term "prompt sequence".

Range - A contiguous set of values. The user may define a range for the contents of a report or display by using the "START WITH fieldname : FIRST//" and "GO TO fieldname : LAST//" prompts. NOHIMS will then select only data that contains values in the fieldname field that are in the range specified. The end points of the range are contained in the range, e.g. if you reply "A" to the "START WITH fieldname : FIRST//" prompt and "F" to the "GO TO fieldname : LAST//" prompt, the included data on the report will contain all values that begin with "A" through "E" as well as any value that is equal to "F". Should you wish to specify all data that starts with any letter "A"-"F" you must enter "A" to the "START WITH fieldname : FIRST//" prompt and "FZZZ" in response to the "GO TO fieldname : LAST//" prompt. This causes NOHIMS to include all values "A" through "FZZZ" value including all values that begin with "FA" through "FZZZ" inclusive.

Reference file - A file in NOHIMS that contains the permissible vocabulary for a specific category of data. Reference files are generally "pointed to" from Application files in NOHIMS. Their purpose is to standardize and control the values that can be entered into certain fields of the Application files. Examples of Reference files are: Occupation, Operation, and Personal Protective Equipment.

Select - To limit the contents of a report or display by identifying the desired range of values to be included. NOHIMS contains reports which are standard, for which the user is not permitted to select the contents, as well as reports that ask the user to identify the range to be reported. When the user is prompted with "START WITH fieldname : FIRST//" and "GO TO fieldname : LAST//" a selection is permitted.

Set - A FileMan data type that limits the value of a field to an element from a specific list of values. Each element of a set has a coded representation and a longer name for the value. The user may choose to enter either of these as the data value. The coded representation is the "internal" value--stored in the data base. The longer name will generally be shown on reports.

Sort - To present report or display data in sequence by the value of some field. Sorting is done on fields in a specified order. For instance if the sort is done on Employee Name and then on Sex, the report would list all employees by their names, and when two or more employees had the same name, the females would appear before the males on the report. "SMITH,CHRIS" female would appear before "SMITH,CHRIS" male, and SMITHSON,CHRIS" would follow.

Subfile - See Multiple. A subfile is a multiple that is contained within a file. Each subfile contains one or more fields of data, and may in fact contain other subfiles. For example, the Employee file contains subfiles of Training Requirements and Medical Programs.

Timeout - The NOHIMS feature which limits the amount of time that a user has to respond to a prompt from the system. When the time limit is exceeded, NOHIMS "backs up" one step in the option, copying the behavior that would occur if the user had entered an "^". The objective in using the timeout feature is to ensure that NOHIMS will not remain active indefinitely if a user is not using the terminal. NOHIMS will eventually log the user off when enough time has elapsed with no terminal entry. The System Manager defines the time limit for each user, so that new users may be given longer to respond.

Value - The data entered into a field. A value in NOHIMS is one of several types: Number, Free Text, Set, Date, Pointer, or Word-Processing. Each type implies limits to the format of the data that may be entered.

Word Processing - A FileMan data type into which the user may enter an indefinite number of lines of text. Each line may have a length of up to 200 characters, but to keep the length of each line within the width of the screen on entry is preferable.

APPENDIX C
ASCII CHARACTER SET

ASCII CHARACTER SET

Octal Code	Decimal Code	Character
0	0	NUL
1	1	SOH
2	2	STX
3	3	ETX
4	4	EOT
5	5	ENQ
6	6	ACK
7	7	BELL
10	8	BS
11	9	HT
12	10	LF
13	11	VT
14	12	FF
15	13	CR
16	14	SO
17	15	SI
20	16	DLE
21	17	DC1
22	18	DC2
23	19	DC3
24	20	DC4
25	21	NAK
26	22	SYN
27	23	ETB
30	24	CAN
31	25	EM
32	26	SUB
33	27	ESC
34	28	FS
35	29	GS
36	30	RS
37	31	US
40	32	Space
41	33	!
42	34	"
43	35	#
44	36	$
45	37	%

ASCII CHARACTER SET
(CONTINUED)

Octal Code	Decimal Code	Character
46	38	&
47	39	' (note: apostrophe
50	40	(
51	41	)
52	42	*
53	43	+
54	44	, (note: comma)
55	45	- (note: hyphen)
56	46	.
57	47	/
60	48	0
61	49	1
62	50	2
63	51	3
64	52	4
65	53	5
66	54	6
67	55	7
70	56	8
71	57	9
72	58	:
73	59	;
74	60	<
75	61	=
76	62	>
77	63	?
100	64	@
101	65	A
102	66	B
103	67	C
104	68	D
105	69	E
106	70	F
107	71	G
110	72	H
111	73	I
112	74	J

ASCII CHARACTER SET
(CONTINUED)

Octal Code	Decimal Code	Character
113	75	K
114	76	L
115	77	M
116	78	N
117	79	O
120	80	P
121	81	Q
122	82	R
123	83	S
124	84	T
125	85	U
126	86	V
127	87	W
130	88	X
131	89	Y
132	90	Z
133	91	[
134	92	\
135	93	]
136	94	^
137	95	_ (note: underscore
140	96	`
141	97	a
142	98	b
143	99	c
144	100	d
145	101	e
146	102	f
147	103	g
150	104	h
151	105	i
152	106	j
153	107	k
154	108	l
155	109	m
156	110	n
157	111	o

ASCII CHARACTER SET
(CONCLUDED)

Octal Code	Decimal Code	Character
160	112	p
161	113	q
162	114	r
163	115	s
164	116	t
165	117	u
166	118	v
167	119	w
170	120	x
171	121	y
172	122	z
173	123	{
174	124	¦
175	125	}
176	126	~
177	127	DEL